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RICHARD P. ROTHWELL, C. E M. E., Editor.
ROSSITER W. RAYMOND, Ph. D., M. E., Special Contributor.
SOPHIA ERAEUNLICH, Business Manager.
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THE ABSORPTION OF THE "AMERICAN SLATE TRADE JOURNAL."

The "American Slate Trade Journal," which for years has been the representative of the slate trade, has been purchased by the Scientific Publishing Company, and has been merged in the "Engineering and Mining Journal," which hereafter will devote more attention to both the trade and technical department of the slate industry than it had heretofore done. The change is intended to be of benefit to all our readers and advertisers and especially to those engaged in the mining, manufacturing and marketing of slate, and in furnishing this industry with machinery and supplies.

An industry whose annual output has a value of nearly $3,000,000 is worthy of special attention and it has been with the object of furnishing it better technical, and more accurate and prompt trade information that the absorption of the "American Slate Trade Journal" was decided on. This paper had long been the special representative of the trade, but it suffered under the heavy disadvantage of all monthly publications that aim to be useful to an active industry, in that their trade and even their technical information is necessarily stale and of comparatively little practical value. In the present day of active competition to be a month or six weeks behind the times soon puts one permanently out of the race. It is only the "fossil" or the unenterprising that can be satisfied with a monthly trade technical publication, and in the struggle for existence in trade as in life it is the fittest who survive.

Those engaged in the slate industry will not only find in the "Engineering and Mining Journal" special information of value to them; but they will also find in the general contents of the paper relating to all subjects connected with the mineral industry of the whole world, matter of great value to them. The wide and influential foreign circulation of the "Engineering and Mining Journal" will be of inestimable service to the export trade in slate.

The improvements introduced in one department of mining are of interest to all other departments of the industry and our slate producers will find in the progress made in other mining and quarrying fields many things that will benefit them, and which in some districts are much needed to put this industry on a better foundation, and render it more progressive than it now is.

The Russian Government has been for some time past considering the adoption of the metric system for all official transactions, and it is stated that such a measure will soon be put in force. Such action would be followed by the general use of the system, owing to the extent of the government business, which includes that of the railroads, telegraphs and other affairs which we are accustomed to see managed by private enterprise.

Such action by Russia is only another reason why the United States should hasten its use of the metric measures, and so avoid further isolation from the rest of the civilized and commercial world. Now that we have the opportunity of building up our export trade we ought to adopt the system which will bring us into union with the greatest possible number of our customers.

The announcement of the suspension of one of the leading South Wales tin plate manufacturers does not come as a surprise. This firm is Messrs. E. Morewood & Co., Limited, of Stanelly, which was established some forty years ago. Of course the extensive closing of the United States market to Welsh tin plate is in part to blame for this event, but a more immediate reason has been the recent unreasonable strike among the workmen in that trade. For more than a year now the tin plate workers have resisted the "masters'" proposal for a reduction in wages, and what trade there was has been greatly interfered with. The men are now consenting to a reduction of 15 per cent., and if the creditors of the firm mentioned extend them time it is probable that it will be able to pull through. We hear of other firms who have been placed on the brink of a similar position, but so far none of them have actually suspended payment.

In the statement of Bessemer steel production in 1897 of the American Iron and Steel Association, which was published last week, a division of steel rails according to weight of section is given for the first time. Of the total of 1,604,399 tons of rails made we find that 5.3 per cent. was of light rails under 45 pounds per yard; 73.9 per cent. of medium rails, from 45 to 85 pounds; and 20.8 per cent. of heavy rails, over 85 pounds per yard. That so high a proportion should be over 85 pounds to the yard shows how great a change has been made in recent years in weight of rails. It is only a few years since 56 pounds was a common standard section, and 70 or 75-pound rails were exceptionally heavy. Now a 75-pound section is below rather than above the standard; a 100-pound section is not uncommon, and we are informed that the Pennsylvania Railroad Company is having some rails rolled which will

weigh 110 pounds to the yard, for use on sections of its road where the traffic is very heavy. The great increase in railroad traffic, the greater weight of locomotives and the use of larger cars and heavier car loads have made this general increase in weight of rails necessary. When locomotives are built in which the weight is 10 or 12 tons to a wheel, and cars are planned to carry a load of 50 tons, a 100-pound rail section is none too large.

The English Salt Union, like some combinations in this country, is finding out that the way of the "trust" is not always easy. The Union, which owns salt-producing wells and mines in Cheshire, has at last arrived at a very critical position. This company was formed some ten years ago to amalgamate a number of interests with the object of reducing the cost of administration, of removing competition and of advancing prices. For various reasons, however, the anticipations of the promoters have not been realized, and slowly but surely its affairs have drifted into a very bad condition. The original estimate of net profits was £385,000 per annum, but this was never realized, the profit in 1890 being just half this amount. In 1893, 1894, 1895 and 1896 the net profits were £176,859, £170,482, £162,154 and £145,292 respectively, while during the year 1897 the net profits actually sank to £66,822. As there is £54,000 to pay yearly on mortgage debentures, it follows that there is hardly anything for distribution on the preference and ordinary shares; in fact, the preference shares, which should receive 7 per cent., get only 1¼ per cent., and the ordinary shares nothing. There have been three chief sources of mismanagement in connection with the Salt Union, and they have all been obvious from the start. In the first place the company was much over-capitalized; secondly, the head offices were in London instead of Liverpool, where the whole of the salt trade is actually carried on; and, thirdly, the raising of the price of salt induced foreign competition which has been keenly felt in the export trade. The shareholders have at last stepped in and formed a committee to consult with the directors as to radical reforms in the management and policy; not too soon, apparently, if the company is to live.

EXPORTS OF MANUFACTURES.

The export trade of the United States in 1896 reached the highest point then on record, the total value of domestic products sent abroad in that year having been $986,830,080, exceeding by $29,500,000 the extraordinary value of the exports which followed the great crop of 1891. The exports in 1897 have now beaten all records. The detailed statement of the Bureau of Statistics of the Treasury Department, recently issued, gives the total value for 1897 of the exports of domestic produce at $1,079,863,018, a sum $93,032,938 in excess of 1896, and $122,529,467 greater than in 1891. This great increase is of itself worth attention; but our present purpose is to call attention to certain changes in the nature of our exports.

The general impression is that the great increase in our exports has been due entirely to the demand abroad for our grain and food products and the coincidence of two years of good crops in this country with two years of shortage in Europe, India and Australia. To some extent this is true; but we find also that there has been in the past six years—and especially in the past three—a very remarkable expansion in our exports of manufactured goods. In the following table we give for a period of six years the total exports of domestic produce—excluding re-exports of foreign materials—with the exports of manufactures for the same period and their proportion of the total:

	Tl. exports.	Exports of Manufactures. Value.	Pr. ct.
1892	$923,237,315	$152,397,392	16.5
1893	854,729,454	177,347,876	20.7
1894	807,312,116	177,786,069	22.0
1895	807,742,415	201,153,663	24.9
1896	986,830,080	253,681,541	25.7
1897	1,079,863,078	279,616,898	25.9

The total shows that in six years the absolute increase—in the face of declining valuations—in the exports of manufactures has been $127,219,506, or 83.5 per cent. If the exports of 1897 had been valued at the prices of 1892, the gain would have been over 100 per cent. The proportion of the total furnished by manufactures has grown in the six years from one-sixth to over one-quarter of the total.

This shows very decided progress in the right direction. We have often taken occasion to point out the advantages to be secured by increasing our exports and cultivating the foreign markets, and it is encouraging to see that actual progress has been made. When an increase in exports of manufactures was shown in 1894, a common opinion was that the movement was only a temporary result of the extreme depression in business which forced manufacturers to dispose of their stocks anywhere and at any price. To some extent this was true, but the experience then gained was sufficiently encouraging to lead to a further movement of the same kind, which still continues. We believe that it will continue, as it is based on our ability to give the world what it needs at a reasonable price, and this will be maintained by our supplies of cheap fuel and raw materials and our low manufacturing costs, in spite of the efforts of our rivals.

In certain quarters where there is a disposition to belittle the importance of our exports of manufactures a studied attempt has been made to discredit the figures of the Bureau of Statistics. Thus a violent attack was made not long ago on the bureau because it included under the head of "Manufactures" such articles as fine copper and illuminating oil. On this point it is enough to say that under the ordinary definition of the term ingot copper, for instance, must be considered as a manufactured article just as much as pig iron. In our complex modern system almost every product is the raw material for some higher stage of manufacture, and it would be impossible to draw any arbitrary line. The only rule which can be made safely is to consider every product which is not marketed in its natural condition, but requires labor and the expenditure of money on it to put it into condition for sale as a manufacture.

Under its present head the reports of the Bureau of Statistics have been greatly improved, and the standard of its work raised. As we have reason to know, the Bureau endeavors constantly to improve its statistics in respect both to correctness and classification, and deserves high credit for its admirable work.

THE LATTIMER CASE.

The Lattimer case, which has for two weeks past been on trial in the Pennsylvania court at Wilkesbarre, is one of great importance, especially as bearing on the rights of strikers and the rights and duties of officers of the law. The decision just rendered, which acquits the Sheriff and his deputies who were indicted for murder, seems to have been the necessary outcome from the facts in the case.

In September last there was a local strike in the anthracite mines around Hazleton, which was accompanied by a good deal of disorder, and by attempts on the part of the strikers to induce by threats and demonstrations the men who were still at work to join them. The Sheriff of the county had been called upon to repress the disorder, and on September 10th, near Lattimer, he was at the head of his armed posse, when he met a crowd of strikers on their way to a coal breaker at Lattimer, near by, with the avowed intention of driving out the men working there. The crowd refused to stop and disperse when ordered to do so by the Sheriff and made threatening demonstrations, violently assaulting the Sheriff and some of his men. Finally the Sheriff ordered his men to fire, the result being the killing of three men and the wounding of several others. This stopped the riotous demonstration for a time; but in the end the Governor of the State was forced to call out the militia to preserve order.

The case was discussed in the newspapers and some violent, incendiary talk indulged in. The result was that the grand jury of the county brought in as a test case an indictment against Sheriff Martin and a number of his deputies for murder in causing the death of one of the strikers, who was named in the bill.

The case was tried at length, a great number of witnesses being examined and elaborate legal arguments were heard. The real question at issue was whether the men indicted had exceeded their legal duty. The preliminary part of the trial closed on Tuesday of this week, when Judge Stanley Woodward, who presided, gave the case to the jury in an admirable charge, which summed up the law in a very clear and concise manner. On the main points involved, Judge Woodward said:

"There is no law, either by statutory enactment or by any decision of our courts, to prevent laboring men from stopping work and going upon a strike whenever, in their own opinion, it is for their interests so to do. Nor is there any law which makes it a conspiracy for working men in any department of human industry to combine together and, by mutual agreement, to refuse employment until there has been brought about a satisfactory adjustment between their employers and themselves upon the points at issue. The liberty of contract is not to be infringed either by the employed or by the employer.

"As the employer has no right to compel a man to work who does not wish to work, so also is it true that the employee has no right to compel his fellow-workman to quit work if he wishes to work. The distinction between the right to strike and the right to compel others to strike is a natural and palpable one, and is approved by the instinctive law of right and wrong, as well as by the statutes and the decisions of the courts, and the compulsion denounced by the law is not alone that which consists in actual physical force applied by one set of men upon another. It may consist in a course of action tending to overawe or frighten or stampede a body of men who are anxious to work, as well as in laying a violent hand upon the individual workmen and forcing them by main strength to abandon their employment and unite in a strike. * * *

"Leaving out of view all the facts on this branch of the case which are controverted and in reference to which the witnesses differ, it is certainly true that both at West Hazleton and Lattimer the great body of the strikers failed to obey the Sheriff when he ordered them to disperse, and insisted in pushing on. Nor can it be doubted that the Sheriff had the right in the exercise of the discretion vested in him by the law to issue the order. And if it was the right of the Sheriff to command the crowd to disperse, then it was the duty of the crowd to

obey his command. The right to give the order implies the duty of obedience to the order, and disobedience of it is evidence of a riotous purpose. If I push on when the Sheriff orders me to stop I do so at my own peril.

"Of course this obligation of obedience to the authority of the peace officer of the county is not confined to laboring men. It extends to and embraces all the inhabitants of the county, rich and poor, high and low. A company composed of the most wealthy and most prominent men of a community, if marching upon a public highway, at a time or under circumstances which, in the judgment and discretion of the Sheriff, make such a demonstration dangerous to the public peace, would be bound to disperse if ordered so to do. And compliance with the order should be prompt and complete."

The jury very promptly acquitted the Sheriff and his men, and in so doing they not only rendered substantial justice, but also aided materially the cause of law and order in the anthracite regions.

The strikers, as their conduct previously had proved, were intent only on driving out the men who had refused to join them, and the Sheriff rightly decided to stop them.

The use of arms in checking a riot is always a point which requires good judgment; but if the officers of the law are to be made to suffer afterwards a blow will be given to their authority from which it will not soon recover. The strikers at Hazleton, moreover, were of the class which now furnishes so large a part of the labor in the anthracite mines; they were chiefly foreigners, who appear to have no regard for anything but brute force, and can only be made to respect the law by its stern application. Almost a generation ago Franklin B. Gowen established order in the anthracite country by his prosecution and conviction of the Molly Maguire assassins; but the population has largely changed since then, and the lesson has been forgotten. More recently the Scranton Sheriff, acting as Sheriff Martin did, stopped a crowd of rioting strikers by a volley that killed a number of them, and he also was tried and acquitted. This second lesson should not be forgotten, but should enforce the teachings of the law as laid down by Judge Woodward.

NEW PUBLICATIONS.

"Les Gisments Auriferes de Siberie (The Gold-Bearing Deposits of Siberia)." By Rene de Batz. Paris, France; Chamerot & Renouard. Pages, 176, with tables, 7 drawings, map and 12 photogravures.

We are indebted to French sources for our latest and most reliable information about the gold mines of Siberia. Last year we had occasion to review the admirable reports on the placers of the Trans-Baikal and the Amour Province by M. E.-D. Levat; and now we have the present excellent work of M. le Baron Rene de Batz. Though covering the same ground the two books differ essentially in plan and method. M. Levat's was a special examination of certain districts, even going into minute details regarding some of their mining properties and treating the general geology of the country and its history only so far as might be necessary to make his subject clear. M. de Batz, on the other hand, writes extensively of the geology, the history and the general condition of mining in Siberia, and goes but little into detailed accounts of properties. He has collected and put into compact form a large amount of information with regard to the Siberian mines, much of which is new to that very large majority of readers who have not had access to the memoirs and reports on the subject which are for the most part in the Russian language.

M. de Batz has divided his subject into four parts. Book I. treats of the history, the administration and the geology of the Siberian gold deposits. It is divided into four chapters, the first historical, the second describing the government and laws of the country, the third the mining laws and regulations, the fourth the geological conditions. Book II. treats of the local conditions affecting the exploitation of the placers, such as the climate, the resources of the country, the means of communication, labor, capital available and organization of work. Book III. describes the methods of exploitation now in use, prospecting, examination of deposits, different modes of working, and the regulations governing the sale of gold. Book IV. relates to the changes which it seems advisable to introduce into the exploitation of the placers, suggesting some changes in the mining law and the kind of machinery which is best adapted to the economical working of the placers. Finally there is an appendix, which includes a number of statistical tables; a list of Russian mining terms with their definitions; the Russian weights and measures, and a condensed description of the Great Siberian Railroad.

We have used the word placers throughout, because there are, outside of the Oural region—which belongs administratively to European Russia, though part of it is geographically in Siberia—practically no quartz mines in Siberia. Hardly 1 per cent. of the gold production is from vein workings; and this condition is likely to continue until the placers begin to be exhausted, or until the improvement in means of transportation which is now in progress will permit the introduction of machinery at a reasonable cost and otherwise reduce the cost of exploitation.

The discovery of gold in the Oural dates back to 1754, and 100 years ago there was already a considerable production. The existence of placer deposits in West Siberia was known as long ago as 1812. In 1830 gold was found in the foot-hills of the Altai; in 1836 in the Saian Mountains, and in 1840 in the tributaries of the Yenissei, when the extraordinarily rich placers of the Mourojneia and the Aktolik were opened. The first placers worked in the Irkutsk region were in the Olekma basin in 1849; while the earliest exploitation in the Trans-Baikal was at Bargouzinsk in 1854. Previous to this, in 1850, gold had been found in the Amour province, but it was not until 1866 that the Amour was opened to private enterprise; though there is reason to believe that clandestine explorations had been carried on previously by "staratieli" in the rich basins of the Amgoun and the Zeya.

The chief conditions governing mining in Siberia at present are the rigorous northern climate, the scarcity of labor and the difficulty and cost of transportation. The climate, of course, cannot be changed; but the others are already being materially modified by the rapidly progressing construction of the Siberian Railroad. Already the line is nearly completed to Irkutsk and during the present year it will probably be finished to Sretensk, the head of navigation on the Amour. This will insure a great reduction in cost of supplies and very soon also an improvement in labor conditions, since settlement is rapidly following the building of the road. The use of improved machinery and exploitation on a large scale will then be possible; and with them a great increase in the area which can be worked, as at present only the richer deposits will pay.

The conditions in Siberia in many respects resemble those of the Yukon region, which is now atracting so much attention here; but the Siberian placers have some advantages; except in the basins of the Lena and the Vitim and on the northern slopes of the Jablonnovoi, the Siberian climate is not so rigorous as that of the Yukon country. Moreover, in Western Siberia, on the Kirghiz Steppe, in a large part of the Trans-Baikal and through all the Amour Valley there is already a considerable agriculture and those regions can furnish food for a large population; while the raising of horses and cattle has been, ever since the country was known, carried on successfully by the Toungouses and other nomadic native tribes. Coal is known to exist in large quantities, and iron ore is also found which can be profitably worked when transportation is available. In Siberia it is only in the occasional "toundras" that we find the swamp muck—frozen in winter and impassable in summer—which seems to cover all the valleys of the upper Yukon and its tributaries. Even under present disadvantages costs in Siberia are trifling compared with those in the Yukon, and the limit of workable values is far lower.

Russia is the fourth gold producer in rank and furnishes yearly about one-sixth of the gold supply of the world. For several years the Siberian placers have returned over 70 per cent. of the total Russian output. There is no doubt that the yield can be largely increased, and every probability that in a few years it will be much greater than at present.

M. de Batz has had the advantage of observing the exploitation of mines in America as well as in Europe, and in his studies of the Siberian gold-fields this enables him to make intelligent comparisons and excellent suggestions for improvement. He has made a very interesting book, which contains a great deal of valuable information about a country which is being gradually but steadily opened up and brought into communication with the rest of the world.

The statistical tables are very full and add to the value of the book. The illustrations include drawings of washers and sluices in use at different mines and reproductions of a number of photographs of characteristic scenes in the placers. A large folding map of Siberia shows the rivers, the general contour of the country, the mountains, watersheds and the locations of the mines and mining districts. A great merit is that the tables are usually well arranged and clearly printed in type of sufficient size not to tax the eyesight.

BOOKS RECEIVED.

In sending books for notice, will publishers, for their own sake and for that of book buyers, give the retail price? These notices do not supersede review on another pageof the Journal.

"Eleventh Annual Report of the Bureau of Industrial and Labor Statistics for the State of Maine, 1897." Augusta, Me.; State Printing Office. Pages, 208.

"The Herring Industry of the Passamaquoddy Region, Maine." By Ansley Hall. Washington, D. C.; Government Printing Office. Pamphlet. Pages, 487.

"Map of Northwest Alaska." Compiled by A. L. McDonald. San Francisco, Cal.; Published by the Compiler in Color. Scale, 15 nautical miles to 1¼ inches.

CORRESPONDENCE.

We invite correspondence upon m tters of interest to the industries of mining and metallurgy. Communications should invariably be accompanied with the name and address of the writer. Initials only will be published when so requested. Letters should be addressed to the MANAGING EDITOR.
We do not hold ourselves responsible for the opinions expres sed by corresponden

The Pelatan-Clerici Plant at De Lamar, Idaho.

Sir: The De Lamar Gold Mining Company has recently shut down the pan amalgamation mill and the Pelatan-Clerici plant, and is putting in leaching vats. This action has excited a good deal of local comment on the supposed failure of the process, which hardly seems to be justified. On inquiry the chief reason seems to be the high cost of fuel. In the nine years' work the mill has used up most of the accessible timber, and wood is getting very scarce and correspondingly high in price; so high, in fact, that the lower grades of ore could not be worked at a profit, and so simple leaching is to be tried. The Pelatan-Clerici plant is not to be dismantled and may be tried on the slimy tailings, which will not leach, for treating which it is said to be well adapted. The fact seems to be that it has been found that De Lamar ore can be leached without fine crushing, so that all mechanical processes could be abandoned. The saving of gold in the Pelatan-Clerici plant has been about 80 per cent.

One difficulty found was that the amalgam stuck to the copper plates and was difficult to remove cleanly. This, it would seem, ought to be prevented. The loss of quicksilver has been about ¼ lb. per ton. The

Pelatan-Clerici process is rather a delicate one and its success depends largely on the complete precipitation of the gold and silver dissolved.

To sum up, it seems that the conditions at the De Lamar now require the cheapest possible methods, and this seems to be in simple leaching. E. N.

Idaho, March 2, 1898.

Chlorination and Cyaniding.

Sir: In your issue of December 4th Mr. C. C. Burger, in a letter headed "Chlorination and Cyaniding," takes exception to my "sweeping assertion" that "unlike the chlorination process cyanidation of roasted ores is always cheap." I fail to see, however, that he has disproved my statement which I still believe holds true.

My contention is that chlorination of roasted gold ores being not always cheap, whereas cyanidation of such ores is always cheap as far as our present knowledge goes, the question will necessarily arise which of the two processes to use in certain cases. The point in favor of chlorination is its usually higher percentage of extraction, and the final question to be settled will be therefore, in any special case, how the increased extraction compares with the difference in working expenses. According to my practical knowledge I believe that in many cases, especially with lower grade ore, the answer will be in favor of cyanidation.

Of course, if Mr. Burger's "sweeping statement" were universally true, that "chlorination costs 30c. per ton more for chemicals, but 10 per cent. more gold is saved than with cyanide, and the cost of crushing is less than one-half"—then I, too, would believe that "it is no longer reasonable to compare chlorination and cyanidation." But these statements, although they might represent the conditions in one particular instance, are decidedly not representative for the majority of cases. The difference of 10 per cent. in extraction may perhaps be taken for the average when we compare the results of cyanidation of raw ores with those of chlorination of roasted ores, but it is certainly much smaller when we compare the results of the two processes both applied to the same kind of roasted ore.

In one case in Oregon, where I treated roasted sulphide ore by cyanide, the chlorination process which had previously been tried with the same ore and had turned out a failure for reasons unknown to me, gave at least no better extraction, and the usual difference I observed, especially with California ores and concentrates was not more than 2 to 3 per cent. in favor of chlorination.

The statement that by chlorination we can get a 10 per cent. better extraction with ore crushed to 14-16 mesh fineness, as compared with 30-40 mesh when treated by cyanide is very startling indeed, and I believe can only represent a very exceptional case.

It is, of course, evident that ore which has to be roasted before leaching does not require pulverization to such fineness as if leached in the raw state, but this applies to both processes. In the one case I alluded to above, crushing through a 15-mesh sieve was found quite sufficient to insure a satisfactory extraction by cyanidation after roasting. When leached raw it is quite true that satisfactory cyanidation requires, as a rule, crushing to 30-40 mesh fineness, but not with roasted ore. It seems to me that Mr. Burger has compared the usual fineness of ore cynided raw with that ore chlorinated in the usual way, after roasting, and if this is so, the comparison has been made under unfair conditions.

In any case my experience showed only a slightly better extraction (2 to 3 per cent.) by chlorination than by cyanidation when in both cases roasted ore of the same fineness was used, and I must consider it very doubtful, therefore, whether in any except very exceptional cases a much coarser product should give a 10 per cent. better extraction by chlorination.

Another point which has to be taken in account when chlorination and cyanide process are compared is the extreme simplicity of a cyanide leaching plant. Although Mr. Burger assures us that "the day is long past when chlorination may be considered a complicated, expensive undertaking." I am inclined to think that many with me consider the development of chlorination in the last 10 or 20 years as certainly not marked by greater simplicity of plan required, but rather by the reverse. When we compare a modern barrel chlorination plant with a cyanide plant no doubt can exist which of the two is the simpler one, and as simplicity is a desideratum with every technical process, the cyanide process is decidedly preferable when all other conditions are the same.

Mr. Burger does not seem to think much of the "antiquated Plattner chlorination works, as used here and there in California" (I would say nearly everywhere); but does he mean to imply that a modern barrel chlorination plant, with 5 or 10-ton barrels, with mechanical roasting furnaces, etc., would be more suitable for Californian mills? A whole week's output of concentrates could be treated in one or a very few operations and during nine-tenths of the time the whole costly machinery would stand idle. The very fact that a modern chlorination plant is eminently suited for the treatment of large quantities speaks against its use at mines with a small output, or where concentrates have to be treated.

A cyanide plant, on the other hand, can be fitted up equally well for nearly any quantity, small or large, and the difference in working expenses will never be as high as with chlorination.

In consideration of this I venture to say that if future improvements in the chlorination process should not allow the use of a plant similar in its simplicity to the cyanide plant of to-day, it is more likely that mines and mills with small outputs, say the Californian mills, will adopt cyanidation after roasting, rather than treat their concentrates in a modern chlorination plant.

Mr. Burger's statement that the cyanide and the chlorination process has each its separate field of application, I believe, will scarcely meet any opposition if taken in general, but I doubt if many will agree with him, that "apparently * * * the necessity of roasting an ore is the dividing point." This may be apparently so, but the fact that there are now quite a number of cyanide plants where roasted ore is treated successfully, speaks against it, and the further fact that cyanide plants compete successfully with modern chlorination plants in treating the same kind of roasted ore as at Florence and Cripple Creek in Colorado, settles the question satisfactorily that the necessity of roasting previous to cyanidation does not prevent its successful application.

I therefore contend that it is not only not unreasonable to compare chlorination and cyanidation, but necessary even in application to such ores as require roasting which hitherto have been considered the special domain of chlorination to the exclusion of the cyanide process.

Personally, I may mention that I have not been connected for some time with either of the processes under discussion.

R. Recknagel.

Auckland, N. Z., Feb. 6, 1898.

BRITISH COLUMBIA AND THE RUSH TO THE KLONDIKE.

Written for the Engineering and Mining Journal by W. M. Brewer.

From the number of prospective Klondikers who are obtaining miners' licenses at Victoria, B. C., the conclusion may be drawn that a large proportion of those who have been leaving lately have determined to prospect the ground on their way to Dawson. Many have expressed the determination not to attempt to go through to the Klondike district proper, but to follow up the tributaries of the Lewis and Yukon Rivers, such as the Big Salmon, Stewart, Pelly and McMillan Rivers, and the creeks emptying into them. Unless licenses are obtained in Victoria or Vancouver before leaving for the north, the Dominion regulations prohibit any mining en route. Canadian and British subjects are treated by the Dominion Government in the same manner as are American citizens in regard to obtaining licenses; in fact, there is absolute impartiality shown towards all.

The numbers of men who are starting for Copper River is increasing daily. Many of these expect to cross from the headwaters of that river to the Tanana and reach the Yukon by the new American trail.

Conflicting stories are being brought back relative to the chances of striking pay-ground in these districts and especially as to the difficulties to be surmounted in getting through. But the crowds are beginning to realize that the territory immediately adjacent to Dawson City has all been staked, and consequently that the wisest course is to scatter out over the unexplored sections I have referred to. It is conceded by all returning prospectors that gold is to be found in any of the districts, either in Canadian or American territory, which I have mentioned.

The Cassiar Central Railway Company, which obtained a concession last year from the Provincial Government of British Columbia on the headwaters of the Stickine River, is preparing to carry out an elaborate programme for thoroughly prospecting the ground within the boundaries of the concession. This company is backed by English capital. Transportation facilities will be afforded to prospectors going into the Stickine country; storehouses are to be built at some central point, where it is the purpose of the company to eventually erect a smelter, providing that the results from prospecting warrant it. The company has established headquarters at Victoria, where the resident director, Mr. Hirschel Cohen, has an office.

As Spring approaches the owners of claims on the west coast of Vancouver Island and on Texada Island show evidences of continuing work. Most of the ore I have seen from these districts is iron and copper pyrites, carrying gold and a small percentage of copper, with sometimes a varying value in silver. Some quite handsome specimens of quartz carrying free gold have been found on Texada Island, but I am reliably informed the veins are usually narrow.

There is some talk of the erection of smelting works at Victoria in the near future, to treat ores from the west coast; but at present it is doubtful if any results follow, although if future development demonstrates that the ore bodies are of sufficient extent and value to warrant such an investment, there is but little doubt but that it will be built. These ore bodies are located in good positions to ship from by water and the nearest smelter at the present time is at Tacoma, Washington.

But comparatively little is known of the interior of Vancouver Island, which is very difficult to explore because of the heavy growth of timber and underbrush. That there are deposits of high grade iron ore, besides the coal which is being mined at Nanaimo, has been generally known for years. But no effort has been made to manufacture the iron ore, though the Government pays a bounty of $2 a ton on all pig made from native ore, and $2 a ton in addition on all iron rolled from native made pig. This bounty is to be paid on the product of all blast furnaces and rolling mills erected previous to 1899.

It is expected that during the present session of the Provincial Parliament there will be some revision of the mining laws of British Columbia. One suggestion made by Provincial Mineralogist W. A. Carlyle is that a regulation should be made compelling prospectors who record a quartz or lode claim to perform $100 worth of work within 90 days from the date of location. At present the law is such that a claim 1,500 ft. by 1,500 ft. can be recorded after discovery, and the discovery and record holds good for one year. Because of this many discoveries have been located, $2.50 recording fee paid, and by collusion with friends, the same discovery relocated year after year without any further development being done. This, the legitimate miners claim, has a very bad influence and retards the development of the mineral resources of the province, thereby keeping out capital, while, if it was made compulsory to perform $100 worth of work within 90 days from date of discovery, it would insure development much more rapidly.

IRON PRODUCTION OF SWEDEN.—The production of Sweden in 1897 is reported at 533,800 metric tons of pig iron, an increase of 45,400 tons; 189,000 tons of blooms, an increase of 3,500 tons; 107,500 tons of Bessemer steel ingots, or a decrease of 7,800 tons; 160,800 tons open-hearth steel, an increase of 25,500 tons. At the close of 1897 there were in operation 111 blast furnaces; 292 forges and blowing furnaces; 27 Bessemer converters, and 38 open-hearth furnaces.

Exports in 1897 included 73,300 tons pig iron; 26,100 tons blooms and billets; 2,163,100 tons bar iron; 7,100 tons wire; 3,000 tons plates; 2,300 tons nails.

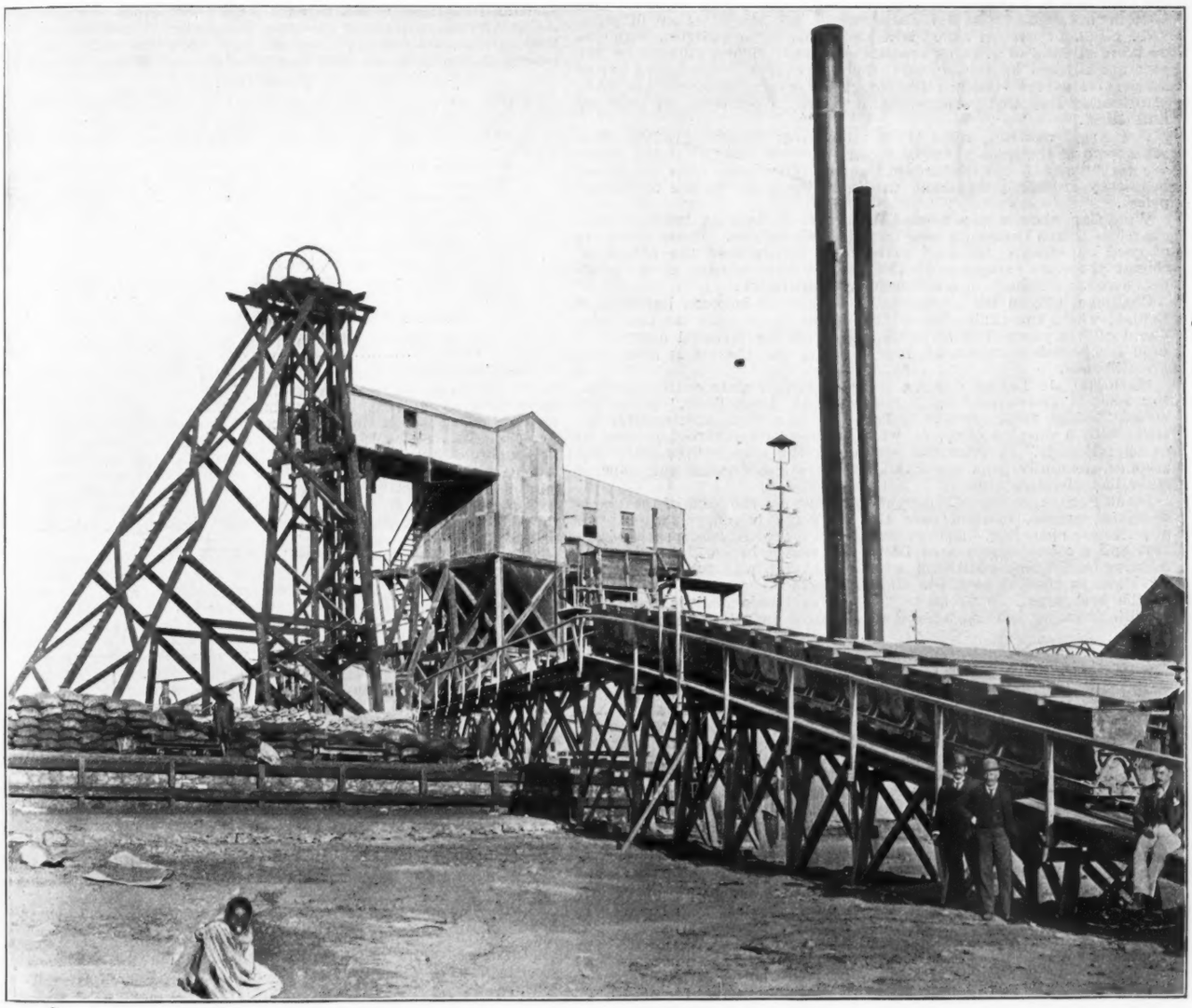
THE PAARL CENTRAL MINE, IN THE TRANSVAAL.

The accompanying engraving is from a photograph showing the head-gear and surface works of the Paarl Central Mine, on the Watwatersrand, and is a typical scene in that district. The hoisting works are of the kind usual in the Transvaal. The ore is carried from the shaft by a tramway, part of which is shown in the engraving. As in all the Witwatersrand mines, little or no shelter is needed from the weather, as the climate is dry and the air clear. In the foreground will be seen one of the "boys"—Kaffir or Zulu laborers—a familiar figure in South Africa.

The Paarl Central is one of the outcrop mines, and a fairly prosperous one. In the year 1897 there were 80,317 tons of ore taken from the mine and worked in the company's 60-stamp mill; the latter being kept running 341 days out of the year. The yield from the mill was 22,883 crude oz., or an average of 0.28 oz. per ton. The cyanide plant treated 58,054 tons of mill tailings, from which there were saved 12,826 crude oz. gold, or 0.22 oz. per ton cyanided. The total yield was therefore 35,709 crude oz., which was, at the values given, equivalent to 28,018 fine ounces gold, or $579,133. The total average return per ton mined and milled was therefore 0.35 oz., or $7.21. Of the total return 68.9 per cent. was from mill and 31.1 per cent. from the tailings, which is not far from the usual Witwatersrand average. The yield was a little below the average for the district, which was $9.54 per ton.

As the average expenses for the Witwatersrand mines in 1897 were $7.02 per ton crushed, the margin of profit in the Paarl Central must have been small. The actual amount of the expenses and net earnings of the mine for 1897 has not been given out as yet.

The average work done per stamp in the mill was 3.93 tons crushed a day, counting, of course, only actual working days. The company has confined itself to its outcrop claims, and has no deep level workings in progress.



HEAD-GEAR AT PAARL CENTRAL MINE, TRANSVAAL.

ROOFING SLATE AND OTHER SLATE PRODUCTS.

In the effort to gather precise statistical data there is in the United States probably no other branch of mining which presents greater mystery than does the slate industry, particularly as related to the marketing of roofing slates. The active quarries are all in limited, compact regions confined to five Atlantic States—Pennsylvania, Vermont, Maine, Virginia and New York, in order of relative importance—and both the figures of production and the domestic and foreign sales ought to be readily obtainable; yet notwithstanding the fairly complete organization of the industry there is so much rivalry and jealousy in the trade that it is very difficult to get reliable information about any part of the business. If one were to believe what is told of each other, by the foremost owners and operators of slate properties, one would have an extremely low opinion of the reliability and business sagacity of those who manage this industry; we prefer, however, to attribute these statements chiefly to business rivalry, and we have by diligent sifting of evidence secured reliable statistics and general trade information.

The business forecast for 1898 for the roofing slate trade is fairly satisfactory, and, as in 1897, the exports for the current year will probably make good any deficit in domestic sales. The disappointing feature at present is the over-production for home consumption, coupled with the prevailing tendency to cut prices. As a large dealer puts it: "Prices to-day are but a shade above shingles; in fact, they are so low that architects, when inclined to specify slate, become disgusted and switch off to a more aristocratic, stylish or costly roofing." It will be a surprise to many to learn that Ohio consumes nearly, if not quite, half of the roofing slates sold in the country. If all the States used as much in proportion to population the roofing slate business would speedily be a profit-yielding bonanza. Next to Ohio last year Louisiana was the largest consumer, New Orleans affording a pleasant surprise by the

numerous orders sent in, while other Southern States were in the market for considerable quantities. On the whole, in 1897 there was less building in the slate-using sections than was looked for at the beginning of that year, and unfortunately this feature is evincing but slight improvement, while roofing slates—particularly sizes little called for—are being manufactured faster than the demand.

All the Pennsylvania and Maine regions produce dark blue to almost black slates, while those from Vermont and New York are largely green, gray, red, purple, variegated and mottled. The different districts by States and their products, without attempt at precise classification, are as follows:

Pennsylvania.

The Bangor quarries, in Northampton County, turn out what may be styled the standard slate for the United States. It is of superior quality, distinctively blue in color, of fine, even texture and makes a handsome roof; used very largely on Government buildings. It is said to equal the best Welsh slate and is fully as tough and strong as the Peach Bottom, or Monson (Maine) slates, which are much higher in price. "No. 1 Bangor Ribbon Blue" is a kind from same quarries, with one or more streaks or ribbons crossing one end. These ribbons on the roof are covered by the lap and, though cheaper, these slates are as serviceable as the standard Bangor. Most quarry products are made into roofing slate and perhaps not to exceed 25 per cent. are used for mill stock.

Pen Argyl quarries, some three miles from Bangor, produce what are known to the trade as "Albion," or "Jackson Bangor" slates, which are next in quality to the standard Bangor. When made from the deeper beds they ordinarily command within 25 cents per square of Bangor prices.

Wind Gap, about a mile beyond Pen Argyl to the west, has four main quarries—Grand Central, Acme, Imperial and Pelican. These slates are of good appearance, but said to be more brittle than the preceding, though there are exceptions to the rule. A large portion of the product, perhaps one-half, is blackboard and mill stock.

Chapman, also in the Northampton district, is between Bangor and Lehigh, where two companies are operating. Less slate has been produced of late years than formerly. Much of the material quarried is used for products other than roofing slate. All the slates from here are ribboned.

Slatington, in Lehigh County, is an important slate center, producing what is known as "No. 1 Pennsylvania Black Slate," commonly styled "Lehigh Slate" by the trade. This is a fine, indestructible article, with a durable color, or when it alters on the roof it does so quite uniformly. In price the best equal the standard Bangor; but seconds, generally from the small beds, are less durable and in time show bad discolorations.

Peach Bottom, in York County, the last but not the least of the Pennsylvania regions, extends over the Maryland boundary, where two quarries are operating. History has it that a quarry was opened before 1800 and a stone church near Delta was roofed in 1805, the slate remaining on the roof until 1893, when the church was pulled down and the slate, as good as new, was sold. By some these slates are said to be the best American product. The Pennsylvania Railroad is interested in a quarry and consumes a considerable quantity of these roofing slates.

Vermont and New York.

It is almost impossible to consider the Vermont and New York slate areas separately, for they form one connected region, extending about 40 miles in a general north and south direction along the boundary between Rutland County, Vermont, and Washington County, New York, and probably two to three miles wide. Most of the quarries are in Vermont, though the half-dozen red slate quarries now worked are in New York. In the trade all are called Vermont slates.

"Sea-Green"—an odd misnomer, for no sea ever has the hue of these slates—is the most popular variety, which in the past few years has recorded the largest output of all American slates. Granville, N. Y., is the head center of the Sea-Green business, though all but one or two quarries are in Vermont, about Pawlet and Wells. The slates are very durable, tough and strong, capable of being split fine, and were it not for changing color unevenly on the roof would be an ideal slate. Attempts to export Sea-Green slates have thus far met with but moderate success, due to this erratic change of color after exposure.

Unfading Green slates are quarried near Fair Haven, Vermont, from a narrow belt not to exceed three miles in length. As the name implies, the color is practically fixed, or where it alters at all it does so uniformly. This is the best standard Vermont slate, for which in certain sizes there is a steady foreign demand for all that are made.

Red slate quarries are all in the vicinity of Middle Granville, New York. The color is practically permanent and they form a fancy, high-priced product, for which the demand is irregular and the supply quite limited.

Purple, Variegated and Mottled slates come from some parts of the Sea-Green and some next to the Unfading Green veins. Generally they are tough and strong and usually retain their color. All told the recent annual yield has not probably exceeded 15,000 squares. Only now and then does an architect make a specification for one or other of these styles.

The slate mills of this section, eight in all, with one exception, are at Fair Haven and Hydeville, where there is magnificent and ample water power. The Penrhyn mill is at Middle Granville. At these different mills marbleized mantels and marbleized work of all kind, blackboards, and in fact all descriptions of merchantable slate—such as steps, risers, platforms, flagging, laundry tubs, vault work, grave boxes, billiard table beds and slate for every variety of electric uses—are manufactured.

Maine.

Brownville and Monson quarries are in the northern part of Maine and their champions claim that these slates are almost absolutely unchanging in color, dark blue to blue-black, strong, fine-grained and durable. Prices range high compared with Pennsylvania slate and for this reason are rarely sold outside of New England. No special effort seems to be made for a wider market.

Virginia.

Near Buckingham, Virginia, there are two quarries, from which the yield last year was said to have been about 14,000 squares. In appearance and quality they somewhat resemble the Peach Bottom slates, though less smooth and even. They are mostly consumed near home and cut but little figure in the general trade.

Other Districts.

Other slate-yielding districts of minor importance in the present stage of the development of the industry are in Arkansas, California, Michigan, Georgia and Tennessee, none of which produced any roofing slate for market in 1897. A quarry has been opened in Utah, but beyond getting out a few good sample specimens no mining has been done.

The geologic position, or horizon, of the hard-vein Northampton and Lehigh slates is placed in the Hudson River division of the lower Silurian formation, which extends from New Jersey to Georgia along the southwestern slope of the Blue Mountains. Peach Bottom, Pa., as well as the slate beds of Vermont, New York and Maine, are said to belong, probably, to the older Cambrian division of the Archean period.

Production.

In 1897 the several regions are credited with the following production, the totals in most instances being verified by the figures of the shipments from the railroads over which the slates were originally forwarded:

Pennsylvania.	Squares.
Bangor	168,500
Pen Argyl, including Wind Gap	126,000
Slatington, or Lehigh Region	113,500
Peach Bottom	23,600
Total for Pennsylvania	431,600
Vermont and New York.	
Sea Green	204,800
Unfading Green, Red, Purple, etc	36,300
Total for Vermont and New York	241,100
Maine, Monson and Brownville	25,000
Virginia	14,000

From this detailed enumeration the total production of roofing slates in the United States in 1897 was 711,700 squares, or about 12,000 squares more than given in the preliminary statistics of "The Mineral Industry" published in the "Engineering and Mining Journal" January 1st last. This slight discrepancy, considering the grand total, is readily explained by the unlooked-for increase in exports which occurred during the closing weeks of 1897, the particulars of which are only now obtainable. Pennsylvania exported nearly twice as much roofing slate last year as in 1896, and Vermont did almost as well. The value of the 1897 exports were nearly $1,000,000, a handsome growth from $40,952 in 1895 and $326,573 in 1896.

Some large operators maintain that exports of roofing slate are falling away compared with the first quarter of 1897, while others are equally positive that the contrary is true. Last year most consignments were to London, Cardiff, Manchester, Bristol, Dublin and Liverpool, though a few large orders were sent to Hamburg. It is possibly a fact that fewer consignments thus far the present year have been shipped to England, but it is believed this slight loss is more than equalized by increased exports to the Continent. Only last week it was learned that considerable shipments are being made direct to France—one lot of 1,400 tons, or 5,250 squares, from Slatington having just gone forward. This is said to be a new departure. Most of the present exports are Pennsylvania products, shipped from Philadelphia.

The final figures of the amount of slate material manufactured by the different mills of the country last year are not yet at hand, though in general it may be said that more square feet were turned out than in 1896, but owing to lower prices the total realized was about the same for the two years. The exports of slate products other than roofing slate are as yet insignificant, though quite a number of foreign consignments were made during the past twelve months.

IRON TRADE OF BELGIUM.—The production of plates, sheets, bars and other forms of finished iron in Belgium in 1897 was 478,858 metric tons, or 15,174 tons less than in 1896. The production of steel ingots was 616,604 metric tons, or 17,630 tons more than in 1896. The output of steel in finished forms was 525,731 tons, an increase of 6,420 tons over 1896.

GLAUBER SALTS IN THE CASPIAN SEA.—Russian chemists have recently been investigating a salt deposit found in the Bay of Kara-Bougas, an inlet of the Caspian Sea, on the eastern shore, nearly opposite Baku. The bottom of the bay was found to be covered with a crust of crystallized Glauber salt, in many places 1 ft. thick. The waters of the Caspian Sea are very salt, and in the bay named, which is nowhere 50 ft. deep, evaporation goes on very rapidly. As fuel can readily be obtained from Baku, and transportation by water can be used, it is proposed to establish a factory to make sodium sulphate on a large scale.

THE LARGEST CRYSTAL.—Some time ago John E. Burton of Lake Geneva, Wis., leased the right to prospect for crystals in the old Green Mountain mine near Mokelumne Hill in Calaveras County, California. He found a number of fine specimens, and one of them is claimed to be the largest group or mass of crystals ever found. As taken out from the drift where it was uncovered, it was 11 ft. 7 in. in circumference; it was 4 ft. 2 in. long, 3 ft. 6 in. wide and 3 ft. 2 in. high. It weighed 2,200 lbs. The mass included one large central crystal and a surrounding group of smaller ones. From the central one it was estimated that a perfect sphere 14 in. in diameter could be cut, while several others from 3 to 8 in. diameter could be obtained from the mass. Mr. Burton has found in all about 12 tons of crystals.

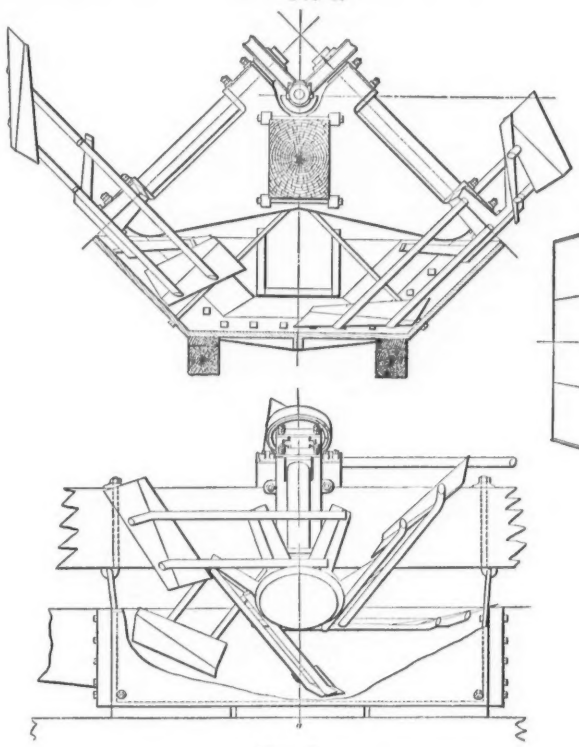
REMOVAL OF SAND FROM WASTE WATER OF ORE WASHERS.*

By J. E. Johnson, Jr.

The ore handled at the plant of the Longdale Iron Company, in Virginia, is of the variety sometimes called by those familiar with the brown ores of the South, "mountain," as distinguished from the "limestone" ore. The latter occurs chiefly in pockets and fissures in the surface of the limestone, generally as particles ranging from the size of a chestnut down, and scattered through clay of usually several times its own bulk. It is commonly found in the lower part of the mountain valleys in which it lies, has no regular formation, and contains very little sand. The "mountain" ore, on the other hand, has a very distinct formation, occurring as a regular stratum in the place of the No. 7, or Oriskany, sandstone. It goes to depths of several hundred feet below the outcrop, and is frequently extremely solid, but in many places is in a gravelly state, and sometimes is mixed with a considerable proportion of clay. It yields about 5 tons of washed ore for every 8 tons of material sent to the washer. Of the 3 tons of waste, about one ton is sand, which consists much more of very finely ground-up iron-ore than of ordinary silica, and is very heavy in consequence.

For years it has been the practice of the Longdale Iron Company to settle all the waste-water and tailings from these washers in large ponds, constructed for this purpose by dumping the slag from the furnaces (which is handled cold) to form high embankments running along the bottom of the valley from one foot-hill of the mountains to another, and lining the slope of the embankment with clay. Ponds

FIG 1.



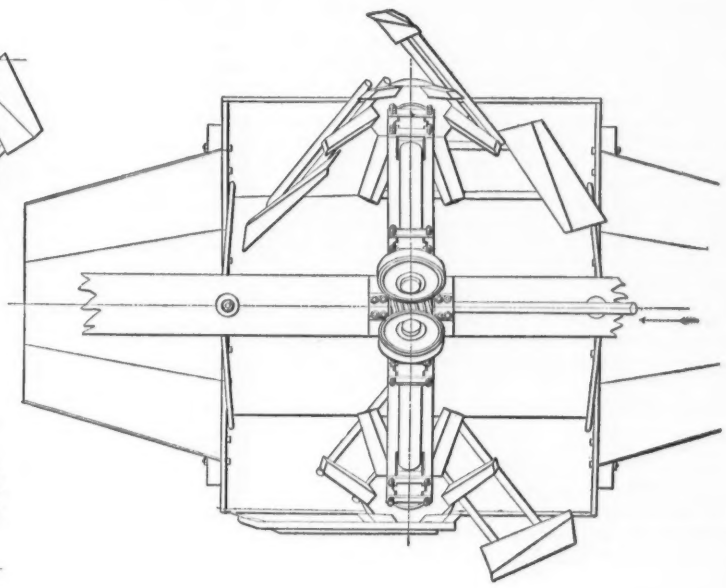


FIG. 2. FIG. 3.

APPARATUS FOR REMOVING SAND FROM ORE WASHER WASTE WATER.

several acres in extent, and 20 to 30 or more feet in depth, are thus formed, and the water from the washers filters through the banks and comes out perfectly clear.

It is desirable to remove the sand from the waste-water, because the cost of these settling-ponds is considerable, and running both the sand and the clay into them not only fills them up faster than the clay alone would do, but, on account of the weight of the sand, it is necessary to give the waste-trough a much greater inclination to carry it off than would otherwise be necessary, and when the length of the waste-trough exceeds 1,000 ft., as at present, the height so lost reduces the available capacity of the ponds. For several years the company has had one or two men to shovel sand from the trough, and one to remove it with a wheelbarrow or scraper, this being a temporary expedient, justified by the prospect of treating the sand moved and stored, to recover from it a proportion of workable ore. These 3 men were not able to handle over 17 to 18 tons per day in this way, and it was not considered advisable to arrange the shoveling-place immediately over the track, and load the sand directly into the cars, on account of the slop, and the difficulties from freezing in the winter.

The removal of this sand was a less simple matter than appears, and objections were found to all the plans suggested.

The machine finally designed for the purpose avoids the difficulties; is simple in construction, and has given satisfaction since July last, when it was put into operation. The construction is shown in Figs. 1, 2 and 3.

The waste-trough is 13.5 by 12 in. section inside, and is enlarged into a tank or box of cast-iron, made in two pieces and bolted together, 6 ft. 2 in. long, 6 ft. 10 in. wide at the top, and 19 in. deep, with sides sloping at 45°. This is extended at each end by trough-sections of sheet-steel, sloping both horizontally and vertically, to make a gradual inlet and discharge, and prevent eddies and excessive velocity of the water in the tank. In this tank revolve two shovel-heads, whose axes of revolution stand at 45° from the vertical in opposite directions, meeting at the top, over the center of the trough. The shafts terminate at the top in worm-wheels, both of which gear into one worm, revolving in a bath of oil in the center of the machine.

The shovel-heads each consist of a 6-armed spider, whose arms stand at about 45° with its axis. Each pair of adjacent arms carry bolted to them, near the top and bottom respectively, two 15-in. wrought-iron rods extending out a considerable distance past one of them. Both the rods of all three pairs extend in the same direction circumferentially, and the upper ones of all three pairs lie in the same plane perpendicular to the axis, as also do the lower ones. Each pair of these rods carries at its outer end a blade or shovel of sheet-steel, whose positions at oblique angles in all directions may be better seen from the drawing than described in words. These blades or shovels are slightly bent along an approximately diagonal line, the rods which support them being bent also, so as to support them fully on each side of the bend. The blades are fastened to the rods with counter-sunk bolts. The effect of the angles at which the shovels stand, in combination with the inclination of the axis of the driving-shaft, may be seen in Figs. 1, 2 and 3, which are respectively a section at the end of the trough, a side elevation with the side of the trough broken away, and a plan.

The blades, when at the bottom of their travel, pass close along the bottom of the trough in a position nearly horizontal, but with the leading edge inclined somewhat downward. When they have made a half-revolution they have been carried sideways far enough to clear the trough considerably, and at the same time have been raised some distance above it. They have also, during the same period, gradually turned from horizontal to vertical. The result of these motions is that they go into the sand exactly as a shovel does, pick it up, lift it clear of the water, pour off the water lifted on the shovel, carry the sand clear of the edge of the trough, and dump it, practically dry, into a car standing on the track beneath.

Experiment suggested the use of perforated blades for draining off the water, and so reducing the tendency of the sand to flow, and this was found to be an improvement. The perforations need not be fine, since many of them fill up in time, and (owing to the firmness of the sand when the water drains away) very little sand passes through them, even when they are considerably larger than the individual grains.

The original speed adopted was 6 revolutions per minute, but this was found to be too high, agitating the water unduly. This speed was reduced to 3 1-3 revolutions, with advantage. The blades travel upstream while in the trough, and the two shovel-heads are set so that the blades on each come half-way between those on the other. This makes the reduction of cross sectional area a minimum, and keeps it nearly constant, so that the flow is about as uniform as possible.

The machine is belted direct to the line-shaft (which is belted direct to the engine), without counter or loose pulley. The reason is that, if the washers could start before the shoveler, the box would be filled with sand and some of the shovels would be buried in it, so that the belt would be unable to start it. By belting direct, the machine starts when the engine does, and without difficulty. The ordinary output

*Abstract of paper read before the American Institute of Mining Engineers at the Atlantic City meeting.

of the machine is from 30 to 40 tons of sand per day, the quantity of water passing it being about 700 gals. per minute.

The method of supporting the machine is clearly shown, except the trestles at each side of the track, which carry the three sticks of timber shown. Of these the top one supports the bearing-brackets for the shovel-shafts, and, in fact, all except the settling-box, and has to be of large section to resist the torsional stresses put upon it by the fact that only one shovel at a time is working—first on one side and then on the other.

ABSTRACTS OF OFFICIAL REPORTS.

Isle Royale Consolidated Mining Company, Michigan.

This company was formed in February, 1897, and was a consolidation of three old copper properties, the Isle Royale, the Portage and the Huron. The capital stock authorized was $2,500,000 in $25 shares, and the stock was issued on payment of $10 per share. The first report, for the year ending December 31st, 1897, shows receipts as follows: From subscriptions, $1,000,000; interest, $2,683; total, $1,002,683. Expenditures on development and other preparatory work were $55,143, leaving $947,540 on hand at the close of the year.

The report of Superintendent W. A. Parnall says:

"The process of enlarging the shaft is now going on. No. 1 shaft at the Grand Portage is in finished condition nearly 200 ft. from surface, and No. 2 on The Isle Royale end about 175 ft. from surface. Shafts are three compartments: two hoisting compartments, each 6 ft. 2 in. in the clear, and the third chamber 10 ft. 4 in. in the clear. The latter will accommodate timber and man hoist, and also pump air and ladder way. At No. 2 very little ground has yet been met with to cut down. There had evidently been good stoping ground in this vicinity, and either before or after legitimate mining was done all the ground was taken out. It would have very much simplified the present work had more been left standing, as at an angle of 56°, and nothing being left to stand on, most of the work has to be done on stages swung in ropes. In reopening shafts where legitimate lines of mining have been wholly ignored it is difficult to form any correct estimate of the speed with which the work can be done.

"At the commencement of work not a single mine building of any description remained on the Grand Portage or Isle Royale end where work was to commence. To-day the following are up: Carpenter shop, blacksmith shop, two boiler houses, two engine houses, two offices (mining captain's and clerk's), compressor house, warehouse, two small shaft houses and two small miners' change houses. In addition to this 25 dwellings on the Huron mine end have received substantial repairs. In the limited time to prepare for winter it was impossible to put up, in all cases, permanent buildings that would answer for machinery that the future will demand. Most of what has been erected, however, will be of service in other ways when permanent equipment is called for. At present three firebox boilers, two Lidgerwood hoists, and a duplex compressor, capable of running 14 drills, are installed, and in good shape for present service. Larger hoists and more boiler capacity, all of which are now on the Huron end, must be put up the coming summer."

Osceola Consolidated Mining Company, Michigan.

The report of this company is for the year ending December 31st, 1897, and includes the operations of the Tamarack, Jr., and the Osceola Mining companies, although those companies were not purchased by the Osceola until October 26th, 1897. The statements for the year are as follows:

Gross receipts from sales of copper, interest and other income		$1,338,056
Total costs		1,075,655
Net income for year		$262,401
Osceola dividends, Nos. 43 and 44	$141,000	
Kearsarge dividend, No. 3	40,000	
Real estate bought	62,611	
		243,611
Surplus for the year		$18,790
Balance of assets, of all the companies, December 31st, 1896		457,032
Balance of assets December 31st, 1897		$475,822

During the year the following was spent for construction, etc., and charged directly to operation expenses: Sinking No. 6 shaft, $34,747; engine and boiler-house at No. 6 shaft, $29,593; rock-house at No. 6 shaft, $10,116; sundry construction, $3,704; total, $78,160.

On October 26th, 1897, the Osceola Consolidated Mining Company, by a vote of its stockholders, increased its capital stock from 50,000 shares to 100,000 shares, and voted to use the new 50,000 shares for the following purposes: 25,000 for the purchase of the Kearsarge Mining Company; 16,000 for the purchase of the Tamarack, Jr., Mining Company; 9,000 shares to be retained in the treasury to provide for future expenditures.

The assets include $482,156 cash, acounts receivable and copper on hand; $62,795 mine supplies; $50,000 wood and timber lands; $75,000 stock in Hancock & Calumet Railroad; a total of $669,951. Accounts payable amounted to $194,129, leaving a balance of $475,822, as above.

The rock mined for the year from all branches was 524,364 tons; rock stamped, 443,086 tons. The cost of stamping was 25.57c. per ton. The mineral obtained for the year was 13,957,373 lbs. of mineral. The quantity of fine copper is not given.

The superintendent's report says that the total shaft sinking on the three properties aggregated 1,654 ft., Osceola No. 6 being sunk 1,056 ft. Total winzes sunk, 545 ft.; total crosscuts, 371 ft.; total drifting on lode, 10,335 ft., of which 7,497 was in Osceola proper, 1,259 at Tamarack, Jr., and 2,577 at Kearsarge.

No. 2 shaft at Kearsarge has been sunk to 21st level. In levels Nos. 9, 10, 11, 12, 14, 15 and 18 to 21, stretches of good ground have been met with. Levels north of No. 2 shaft have now sufficiently proven copper ground to justify sinking of new shaft near recently acquired Iroquois territory.

No. 2 shaft of the Tamarack, Jr., was sunk 96 ft. A large amount of good stoping ground is reasonably assured from the 11th level. The present prospect of good ground, extending north of No. 2 shaft, together with a large area south of No. 1 gives promise of obtaining good results a long time ahead.

No. 4 shaft at the Osceola was sunk 194 ft., and is now at 36th level; No. 5 shaft 83 ft. and now at 36th level; No. 6 shaft 1,056 ft. and is now 15 ft. below 22d level. At the 31st level, south of No. 5 shaft, a crosscut for the purpose of testing the Calumet conglomerate, has been drifted 243 ft.

In this report there is no statement of the quantity of copper produced, nor of the receipts from sales, nor any other information that is necessary to enable any stockholder to determine the economy or efficiency with which his property has been administered. Such reports are very far from satisfactory, and should be protested against by the stockholders. It is invariably true that where such proper information is withheld it is because there is reason to be either afraid or ashamed to make it known.

Victor Gold Mining Company, Colorado.

The directors' statement of the operations is for the year ending December 31st, 1897. The general manager's report says that during the year a contract was made with the Golden Circle Railroad Company, a corporation owned by the Florence & Cripple Creek Railroad Company, by which a railroad connection is now made between the mine and the main line of the first named company. This company agreed to pay 50c. per ton in addition to the regular freight rate until the railroad company was reimbursed for the cost of extending its line to the mine. The mine formerly paid 75c. per ton wagon haul to the railroad and by this arrangement it will save 25c. per ton until the railroad company is reimbursed, and thereafter 75c. per ton on its yearly output of say 24,000 tons, besides saving on the hauling of coal. The works of the Metallic Extraction Company have been greatly enlarged during the year and they are now prepared to receive 200 tons of mill ore per day.

The ground opened below the 8th level has been found to contain larger and richer bodies of ore than above. The main vein has straightened up almost vertically from the 8th to the 10th levels; it has also increased in size very materially by smaller veins falling into the main vein from the foot wall side. The main vein is now from 4 to 15 ft. wide and still continues to carry a very fair proportion of high grade ore. From the present appearances of the vein from the 7th to the 10th levels the indications point very strongly to a permanent larger vein going to a greater depth than has ever been expected, as well as constantly increasing in size and holding its value of high grade ore in addition to its quantity of mill ore fourfold.

During the year a 3-in. water pipe connection has been made with the mine from a pumping station a distance of 2,600 ft., furnishing an ample supply of pure water at a greatly reduced cost. An air-line connection of 4-in. pipe has also been made with the La Bella Mill, Water and Power Company, a distance of 2,600 ft., to furnish air for the machine drills, and from 3 to 6 machine drills per day are now running, as required. An electric light line has also been established the same distance of 2,600 ft., which furnishes light throughout the mine and on the surface. A new hoist has been installed, with a capacity of 250 H. P., with 1,500 ft. of flat 4-in. by ½-in. cable, with a double-deck cage. A new gallows frame 50 ft. high has been erected; the shaft-house enlarged and also a new 80-H. P. boiler has been installed, and a pump has been placed at a station cut in the main shaft at the 10th level; this pump has a capacity of 500 gals. per minute. The two ore floors in the ore-house have been extended to the west 30 ft. and an addition built on the ore-house with a capacity of 500 tons.

The development during the past year has shown that in the straightening up of the main vein the size of the ore bodies have been very materially increased in size and everywhere the West Vein has held its own in value and increased in size in the lower levels. It is intended to sink the main shaft constantly with a separate engine placed in the 10th level station, thereby not interfering with the hoisting of ore and waste. Notwithstanding the fact that the company was unable to market a large portion of its mill ore during the past year the company has cleared during the period of the suspension of dividends $11,000 per month.

The underground development during the year included 1,950 ft. drifting, 550 ft. crosscutting, 120 ft. winzes and upraises, and 161 ft. sunk on the new vertical shaft, which is now 621 ft. deep.

The ore sold during the year included 2,209 tons smelting ore, of an average value of $104.30 per ton, $230,449; and 13,329 tons cyanide ore, averaging $9.25 per ton, $123,323; a total of $353,722. The operating costs for the year were as follows:

	Total.	Per ton.
Wages, mining and development	$124,562	$8.0166
Assaying and sampling	3,237	.2083
Fuel	7,332	.4719
Mine timbers	1,952	.1256
Hauling	18,331	1.1798
Team maintenance	208	.0134
Mine supplies	23,195	1.4928
Office expense	4,980	.3205
General expense	10,817	.6962
Legal expense	2,053	.1321
Insurance	6,417	.4130
Dividend expense	78	.0503
Total operating cost	$203,865	$13.1204
Net profit for the year	149,907	9.6478
	$353,772	$22.7682

The dividends paid during the year amounted to $100,000, making a total of $805,000 paid in all. The company had a balance of $77,732 cash on hand at the close of the year. Since that time a dividend of $50,000 has been declared and paid March 1st, 1898.

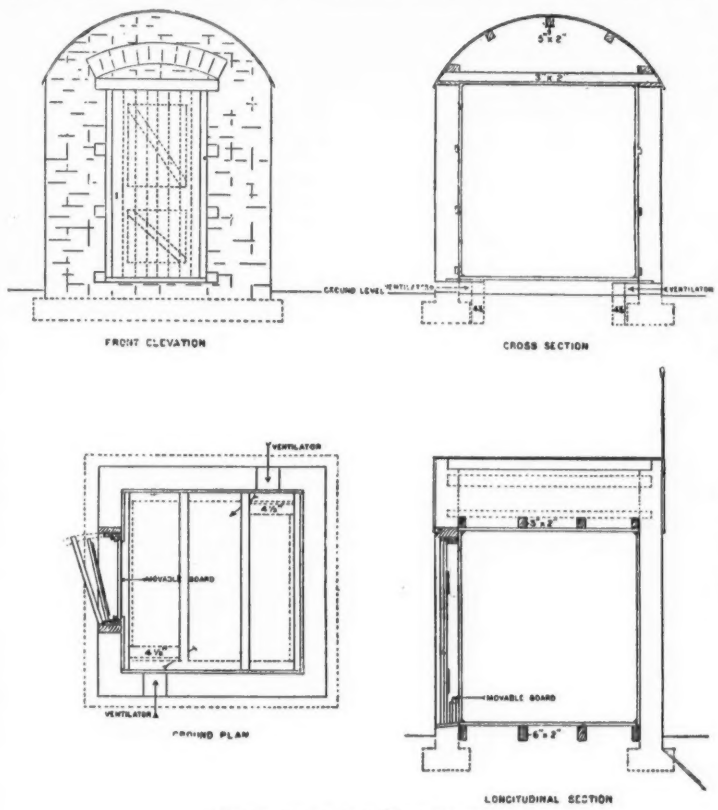
THE STORAGE OF EXPLOSIVES.*

By Robert Hunter.

The strict regulations in force in Great Britain oblige mine owners to take great care in storing explosives in the neighborhood of mines. The consequence is that in all large mines, special buildings must be provided and much care taken in their construction. The accompanying sketch shows a very good plan for such a structure, which is capable of holding from 1,000 lbs. to 4,000 lbs. of the material.

The building must be substantially constructed of brick, stone or concrete, or excavated in solid rock, earth, or mine refuse, not liable to ignition. It would not be permissible to have bare brick or stone walls inside. A coating of cement on the inside walls is not much better, as, unless great care is exercised, the cement is apt to scale off and become a source of danger. If the cement is painted it may keep in fairly good condition, but the best plan of all is to have the building lined with wood and have a wood floor, all fastened with copper, brass or zinc nails, or iron nails countersunk and puttied, and apply two or more coats of paint or varnish to walls and ceiling. Double doors are advisable, both of which should open outwards, be fitted with strong locks, and with hinges inaccessible from the outside.

It is very necessary that the building be ventilated, as a store is generally in such a situation that it is exposed to sun and rain, and, unless free ingress and egress of air is provided for, many explosives will deteriorate in the moist atmosphere which such influences generate and maintain. The woodwork of the store is also likely to rot and require frequent renewal. The ventilators should be so constructed that



STOREHOUSE FOR EXPLOSIVES.

access cannot be obtained by them to the contents of the store, and that malicious persons cannot insert combustibles through them which might cause fire or explosion. Precautions must also be taken to prevent water getting into the store, as it has injurious effects on every explosive.

In the drawings Fig. 1 is a front view; Fig. 2 a cross section; Fig. 3 a plan, and Fig. 4 a longitudinal section. The building shown in the drawings is 6 ft. by 6 ft. inside measurement, and 6 ft. 6 in. high. The external dimensions are 7 ft. 6 in., by 7 ft. 6 in., and 10 ft. 3 in. high in the center. The specifications prepared by the writer are given below. They may, of course, be modified to suit local requirements:

Specifications.

Foundation.—The site of the building to be leveled, and the subsoil sufficiently removed in order that a firm bottom be obtained, and the foundation to consist of hard-burned bricks or rubble well grouted with mortar.

Walls.—The walls to be of the best hard-burned bricks 9 in. thick, and every fifth course to be headers. Gable ends to be carried up to top of roof and circled as shown on plan, and the outside walls to be neatly pointed.

Roof.—The roof to be covered with galvanized corrugated iron 22 B.W.G., screwed to purlins, which are to be laid from gable to gable as shown in plans, and bedded in cement at gables and wall plates, and joints filled with white lead, also screw or rivet holes.

Door Frames.—Door frames to be 9 in. by 2 in., fastened to dooks built into wall and lintel 9 in. by 4½ in.

Doors.—Outside door to be 6 ft. 1 in. by 3 ft. by 2 in., and inside 6 ft. by 2 ft. 8 in. by 1½ in. framed and lined, and movable block inside inner door 9 in. by 2 in. with fillets on each side so that it can easily be lifted out.

Flooring.—Sleeper joists to be 6 in. by 2 in., and flooring 1⅛ in. tongued and grooved.

Lining.—The inside walls and ceiling to be lined with ⅝-in. plain white lining, fastened to fillets as shown in plans, but not touching walls, and with breaks in fillets at intervals to allow air to pass all around, and nailed to wall plates at top and flooring at bottom, with a fillet at top and bottom on all four sides.

Lightning Conductor.—Lightning conductor to be of ¾-in. round iron, terminating 4 ft. above roof in three points, nailed against wall by iron holdfasts and carried 6 ft. into the ground at an angle of 45° away from the building.

Ventilators.—One cast iron ventilating air box 9 in. by 4½ in. to be inserted on each side, with a dwarf wall 18 in. long opposite each, and a slate or slab same length on top just under flooring, all as shown on plans.

Locks.—All locks, hinges and nails, where exposed, to be of brass or copper, or counter-sunk and puttied.

Woodwork.—Outer and inner doors with their frames to be of best red pine, and the remainder of woodwork of white pine. All to be thoroughly well seasoned and perfectly free from knots, shakes or bluewood.

Painting.—Outside door and all exposed woodwork to receive three coats of good oil paint.

* Abstract of article in London "Colliery Guardian."

ALGERIAN PHOSPHATE PRODUCTION.

Our special correspondent sends us the following statement of the shipments of Algerian phosphates from the port of Bone for the full year 1897, as compared with 1896. The shipments are given in metric tons:

Shipments of Algerian Phosphates from the Port of Bone.

Shipped to—	1896.	1897.	Shipped to—	1896.	1897.
Algeria	1,324	598	Holland	2,900	6,000
Austria	4,240	600	Italy	20,170	18,960
Belgium	1,500	2,000	Japan	3,500	8,014
England	54,005	73,430	Roumania	....	1,300
France	34,661	70,155	Russia	....	100
Germany	17,490	24,770	Spain	250	1,165
			Totals	140,040	207,082

Of the total production in 1897 Crookston Brothers report 96,547 metric tons, the Constantine Phosphate Company 82,145 tons, and the Societe Generale de Phosphates Francaise 28,390 tons, making in all 207,082 metric tons. These figures represent the total production of Algeria and Tunis. Some deposits in the last named country will enter in the production in 1898, and their shipments will be made from the port of Sfax.

THE MINERAL PRODUCTION OF SPAIN IN 1897.

From the advance statement prepared by Sr. Roman Oriol and published in the "Revista Minera" we obtain the following interesting figures in relation to the mineral production of Spain for the year 1897:

Copper.—The production of copper was stimulated by the demand for the metal and the high prices. Nearly all the important companies maintained their production, only one—the Compania de Sotiel Coronada—reporting a considerable decrease, its output having been 68,725 metric tons of ore and 1,425 tons of precipitate, against 103,311 tons ore and 2,467 tons precipitate in 1896. The Rio Tinto Company gives the following statement of the output of its mines, in metric tons:

	1896.	1897.
Copper ore	1,437,332	1,388,392
" precipitate	19,912	20,503
" matter	16,378	16,159
Sulphate of copper	4,192	3,100
Silver-lead ore	714	1,406
Iron ore	22,426	28,631

The exports, as compared with 1896, were 822,570 tons of copper ore, an increase of 193,030 tons; 36,055 tons of precipitate, an increase of 2,061 tons; and 15,432 tons of matte, a decrease of 3,391 tons.

Iron Ore.—The exports of iron ore, which very nearly express the production, were 6,884,244 metric tons, an increase of 613,656 tons over 1896.

The actual output of iron ore in 1897 was 7,468,500 metric tons, an increase of 705,918 tons over 1896. The province of Viscaya reported 5,170,000 tons of the total in 1897, and Santander 800,000 tons. Of the exports Great Britain took 5,091,027 tons, Germany 1,058,694 tons and France 435,972 tons. There were 59,243 tons shipped to the United States.

The production of pig iron in 1897 was 297,100 tons, a large part of which was converted into steel. The output of Bessemer steel was 63,200 tons, and of open-hearth steel 38,600 tons, a total of 101,800 tons of ingots. The quantity of steel and wrought iron converted into finished forms was 134,250 tons.

Iron Pyrites.—The exports were 217,545 tons in 1897, a decrease of 182,943 tons. The difference was largely due to the smaller production of the Aguas Tenidas Company, which mined only 155,000 tons in 1897, a decrease of 50,000 tons.

Lead and Silver.—The production of lead showed a material increase. That of silver also showed a gain, as was to be expected, nearly all the Spanish silver being obtained from lead ores. The output by provinces was as follows, lead in metric tons and silver in kilograms:

	Lead		Silver	
Province.	1896. Tons.	1897. Tons.	1896. Kilos.	1897. Kilos.
Murcia	81,922	90,000	15,852	70,000
Jaen (Linares)	36,169	40,000	5,030	10,500
Cordoba	32,971	30,000	39,700	45,500
Almeria	11,658	11,000	.....	.....
Guipuzcoa	4,297	5,000	3,208	4,000
Guadalajara	.....	.....	764	1,000
Totals	167,017	176,000	64,554	131,000

The exports of lead were 171,774 tons, an increase of 3,189 tons; of lead ore, 8,267 tons, an increase of 1,982 tons.

Manganese Ore.—The exports of manganese ore were 95,756 tons, a gain of 7,889 tons. The production, which was 90,000 metric tons in 1896, increased to 100,000 tons in 1897. The gain was chiefly in the carbonate ores from Huelva.

Quicksilver.—The production was 49,540 flasks, of which 47,357 flasks were from Almaden and 2,203 from other mines. This was an increase of 6,027 flasks from Almaden, and a decrease of 371 flasks from the other mines; a net increase of 5,656 flasks. The exports were 1,742,325 kgs., an increase of 184,270 kgs.

Zinc.—The exports of zinc ore were 41,040 metric tons, an increase of 5,164 tons; those of metal were 2,170 tons, a decrease of 1,390 tons. The production of zinc ore diminished, however, having been 60,000 tons in 1897, or 4,828 tons less than in 1896. The decrease was in the output of the Real Compania Asturiana, which reports 20,000 tons from the Reocin mines and 7,200 tons from Udias and La Florida, or 4,000 and 25 tons respectively less than in 1896.

Antimony.—The production of antimony was very small; 20 tons of ore were exported, against 120 tons in 1896.

Coal.—The production of coal was, in metric tons:

	1896.	1897.	Increase.
Coal	1,852,947	1,883,500	30,553
Lignite	55,413	55,900	487
Total	1,908,360	1,939,400	31,040

The chief production was from the mines of the Asturias, which turned out 1,168,000 tons of coal in 1897.

Salt.—The production of salt reached 500,000 tons, a decrease of 21,751 tons from 1896. The exports were 235,871 tons, a decrease of 18,932 tons.

Imports.—The most important mineral imports in 1897 were 1,633,333 metric tons of coal and 214,763 tons of coke. The imports of iron and steel included 1,855 tons pig iron, 13,558 tons wrought iron and 24,037 tons steel. Other imports were 34,972 metric tons of petroleum, 5,310 tons of sulphur and 34,862 tons nitrate of soda.

SLAG BRICK IN GERMANY*.

By F. Luermann.

The direct production of building and paving stone from fluid slag is nothing new. Such slag stone or blocks are not satisfactory material for dwelling houses because they are, like glass, impermeable to air as well as steam. In human habitations the aqueous vapor exhaled by the occupants would condense on cold days on both windows and walls, thus rendering the rooms damp and unhealthy. On the other hand, brick manufactured from granulated blast furnace slag are permeable and hygroscopical; that is, both air and steam can penetrate them.

Eugene Langen, of the Friedrichs-Wilhelm Huette, near Seigburg, Westphalia, was the first to produce granulated slag or slag gravel for brick making by passing the fluid slag through water. This causes disintegration; silica is separated in a soluble condition, in which it easily hardens in the air, and combines just as easily with caustic lime. The single grains of this slag-gravel when compressed tightly are bound by the soluble silica, and when ground to a fine dust, so that the particles come into closer contact with each other, the binding by the silica is sufficient for the production of good building brick. Brick from ground slag, however, require a longer time for hardening than those made from granulated slag. By mixing granulated slag with dust from slag which has crumbled in the air good brick can be produced without addition of lime, but the hardening process is rather slow. Hardening takes place in from six to eight days, with brick to which about 10 per cent. of burned and slacked lime has been added.

Granulated slag, from its passage through water, retains from 19 to 33 per cent. of water, according to its porosity. This fact has to be taken into account in shipping. Its weight ranges between 1,100 and 1,500 lbs. per cubic meter (35.3 cubic ft.); that of ground slag runs as high as 2,900 lbs. Ground slag can be added to the mixture of granulated slag and lime when especially dense and strong brick is to be produced.

The bricks can be given any shape desired, and they preserve this shape because they are not burned. They show sharp edges and level surfaces, and give the best satisfaction when as little mortar as possible is used. The natural color of slag brick is that of grayish white sandstone. Its weight ranges according to dryness and the kind of slag used between 6½ and 7 lbs., or about 260 or 280 bricks to a ton.

The strength of slag brick fully equals that of ordinary burned brick. Twenty-four to 28 lbs. per one square centimeter (3.155 sq. in.) are usually considered the highest admissible burden for ordinary brick. Well hardened slag brick can withstand theoretically burdens up to 160 and 180 lbs. without showing cracks. The resistance of slag brick to high temperatures is quite remarkable. It can be heated to a weak red, that is, to where the carbonate of lime begins to decompose, without injury to its strength. Even if a part of the lime at such a high temperature should have been decomposed, and thus rendered caustic, carbonic acid is again absorbed at a lower temperature, and the brick becomes as strong as it was before. Slag brick, therefore, is the better adapted to the construction of chimneys, as the products of combustion ascending contain a large quantity of free carbonic acid, which is delivered to the brick. For the same reason it can be used with advantage for lining lime-kilns and for boiler setting.

Slag brick is about five times as permeable as ordinary burned brick. Under equal pressure a cubic meter of lightly burned clay brick permitted in one minute the passage of 23.3 liters of air, slag brick permitted the passage of from 101.2 to 113.4 liters. Its porosity, too, is greater than that of burned brick. It does not absorb water as quickly as clay brick, but regains its permeability quicker than the latter. Burned brick filled up its pores with water in 12 hours, while slag brick required 190 hours to get thoroughly soaked.

In order to determine whether slag brick has sufficiently dried and hardened to be safely used, and especially to test its resistance to frost, a small piece of brick fastened to a string is dipped into a cold, concentrated solution of sulphate of soda, and hung up at any place in a room. By the evaporation of the water in the solution and the crystallization of the soda, which in its action resembles the formation of ice, non-frost-proof brick is destroyed, each crystal needle carrying a little cap of the material from which the brick was produced. Not only slag brick, but any other brick can be tested in this manner as to its power of resistance to frost.

The brick from the slag of furnaces making Thomas or basic pig are considered better than those from Bessemer, and foundry slag second. The cost of a slag brick plant in connection with a blast furnace is estimated at about $5,000. At several works the cost of production is as low as 10 marks (about $2.40) per 1,000. In the production of 1,000 bricks there are used from 6,000 to 7,000 lbs. of granulated slag and 450 to 700 lbs. of burned lime.

*Abstract of Article in "Stahl und Eisen."

MICA MINING IN INDIA.

An interesting article by Mr. Walter Coogan, in the "Indian and Eastern Engineer," says that the mica mines of Bengal are attracting more attention than ever before. In the Hazaribagh and Gya districts the mica is very plentifully distributed. The nearest mines are from 35 to 70 miles from the nearest railway route, and this is a disadvantage which has to be reckoned with. The country, owing to its rocky formation, cannot boast a very luxuriant vegetation, and the jungle is a stunted growth of trees (mostly sal), which, although luxuriant in the rains, dry up in the hot weather. The soil is dry and arid, and the country uninviting. Very few Europeans live in the region. The climate is healthy in the cold weather, but the rains generate malaria, and so perilous is life during two or three months of the year that most of the Europeans withdraw from the mines for that reason, and also because water floods the mines and renders them unworkable except at a large and unprofitable expenditure. The natives are all mica miners, and find sustenance during the stoppage of the works in the cultivation of their small patches of fields which dot the country at intervals. They are physically vigorous, but are of dirty habits. The need of a proper supply of water is much felt.

The mica tracts run in tens of miles, and its presence can be detected anywhere and everywhere within its clearly defined limits. In general, however, it is most noticeable on the rising grounds, and, as its metamorphic presence is chiefly attributable to volcanic movements, the belief prevails that it is to be found in the largest quantities on these elevated portions.

Here the miner commences operations. Not much time is lost in discovering a "phook" or vent, or perhaps a small outcrop in quartz, which attracts attention, and in an hour or two hours the chiselmen are a few feet down, taking up small refuse mica and come upon what appear to be leaders to a vein of mica. A defined vein once found is followed up carefully. These are generally only a few feet in thickness and run in a very ill-defined course, winding in and out and dipping downward and sideways, as the case may be.

The holes or tunnels (for they cannot be called shafts) made in the hills following these veins depend, of course, upon the thickness of the lead. Some mines have 15 to 20 ft. diameter holes; others, and most of them, just enough to allow of one to four or five pairs of coolies crowding down on their haunches and wielding their hammers; there can consequently be no system so far as the excavation goes. Where opportunities present themselves "lataps," or wooden lifts, are employed to remove the cuttings and waste, otherwise, as is generally the case, strings of women form up in line, inside and along the tunnels, and the cuttings are passed along to the pit mouth by small baskets. And so the vein will wind its course into the bowels of the hill. Other veins are found on other sides, and by the time they are all exhausted the whole of the hill forms a network of tunnels which occasionally join together inside, forming large hollows.

The processes of mining are interesting. All along a rich vein the mica is to be found imbedded in the rock, which has, when very hard, to be blasted with powder or dynamite when water occurs. The harder rocks having been removed, the chiselmen, who work in pairs, carve out the mica which is found in "books." The best mica is found in rock, where it is clear, owing to its encasement and protection against percolation and earthly movements. Where found in the softer soils its substance is weak, and its transparency sometimes partially or wholly destroyed by interlaminar inclusion or infiltrations of other mineral substances. Mica when found on the surface is soft and cracked, and, being one of the weakest of the rock constituents, suffers deformation from the slightest earth movement. Clearer and better colored mineral is found lower down, and the harder and less diversified the rock formation, the better is the mica in color and substance.

The native miners are mostly Sonthalies—a hard-working set of people. Latterly, however, they have become intermingled with other migratory tribes. The miners' tools consist of a drill for making blast holes and a chisel and hammer for lighter work. The men are on the mines with their women, who form up lines for the outgoing cutting, by 7 o'clock; work then continues till sunset. During this time the miner is working away industriously and needs little supervision. The average wages of a coolie are 3 annas per day and of a woman 6 pice.

The mines in their full development go down to from 100 to 250 ft., one having been driven deeper. There is a very small percentage of accidents, and miners are cautious enough when tunnelling underground to leave sufficient support for the overhead formation, and where necessary it is propped with heavy sal timber.

Every evening the output from each mine is put together in neat bundles and tied together with bark strippings and taken to the manager's bungalow. The next day the cutters are at work, and the out-

turn is roughly trimmed with "huswas" or sickles. This trimming or cutting is done according to the requirements of the buyers, and then forwarded to the head depots to be finished and packed for shipment. The English and American markets consume the greatest part of the exported mica.

The prices of mica vary according to the sizes and transparency, very high prices having been obtained for the larger sheets of 36 sq. in. and upward. Its colors also vary in shades of yellow, green, brown, chocolate and ruby, the greatest demand being for the latter. The prospects for the future are decidedly promising; the demand is always a substantial one, and mica of fair quality finds ready buyers.

MODERN BRITISH BLOWING ENGINES.

In a paper recently read before the West of Scotland Iron and Steel Institute, Mr. T. M. Grant traces out the history of the blowing engine from a very early date. The various types of the modern blowing engine and their graded evolution are described. In conclusion he says that in Great Britain the latest style of blowing engines is found in the fine engines of the Dowlais Iron Company at Cardiff. These engines were made by Kitson & Co., Leeds, and are of good design and workmanship. They follow the vertical type, as in Cleveland, and in West Cumberland at the Solway works. The engines, of which there are three sets working, are of the compound surface-condensing type.

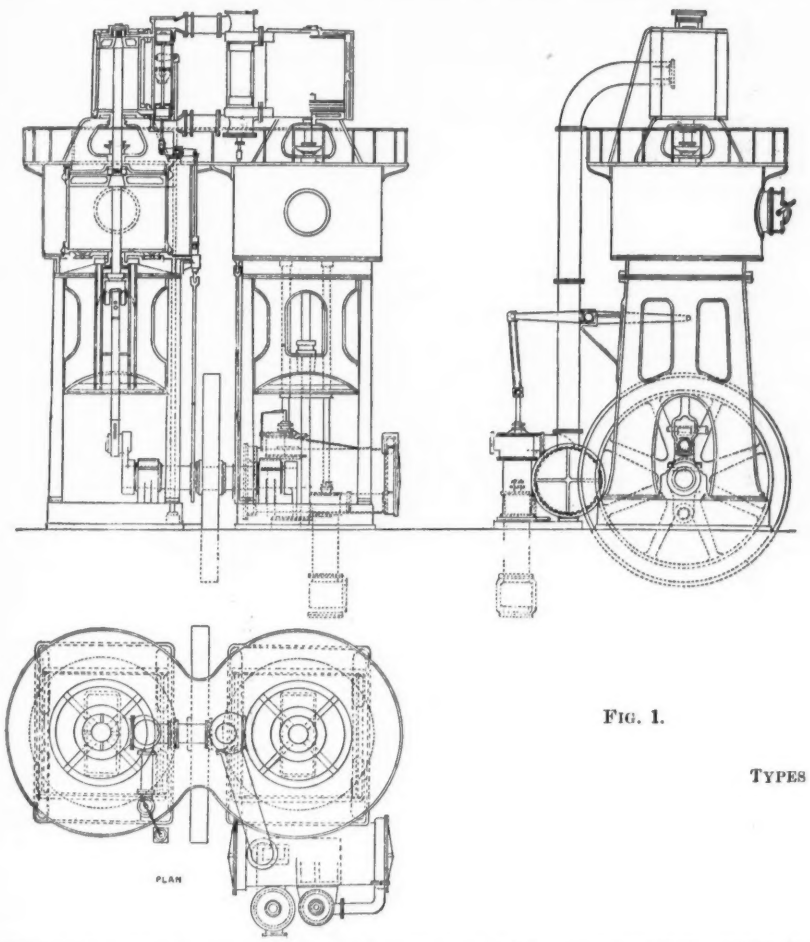


FIG. 1.

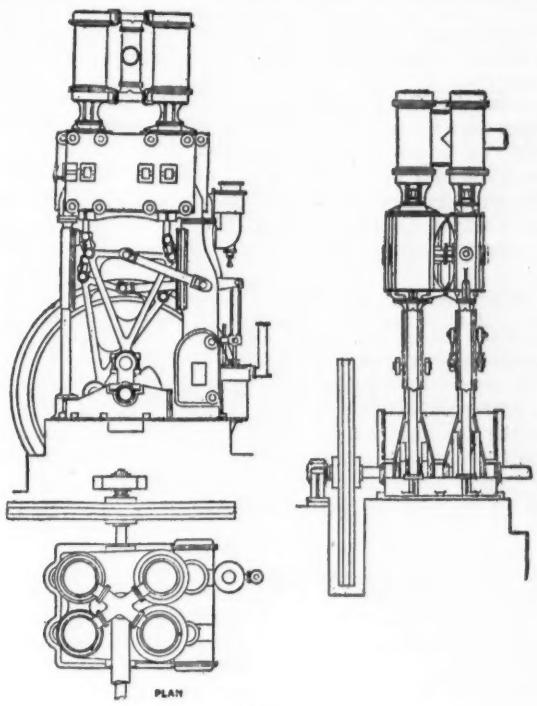


FIG. 2.

TYPES OF MODERN BLOWING ENGINES.

The blowing cylinders are 88 in. in diameter, the high-pressure steam cylinder 36 in. in diameter, the low-pressure steam cylinder 64 in. in diameter, with a stroke of 5 ft. Each engine, with a boiler pressure of 100 lbs. to the square inch, develops about 1,200 H. P., and can deliver 25,000 cu. ft. of air per minute, at a pressure of from 4½ to 10 lbs. per square inch as desired. There is no doubt that this, or an engine designed on the same principles, is the best blowing engine that can be produced. It has been adopted on the Continent and in America. A sketch of this engine is shown in Fig. 1. In Fig. 2 is given a sketch of a quadruple-expansion blowing engine designed by Fleming & Ferguson, in which the cylinders are placed in tandem, vertically, the high-pressure and one intermediate on one side, the second intermediate and low-pressure on the other.

The whole tendency of modern practice is to have vertical cylinders; in marine, land, and blowing engine practice the writer's idea of a perfect blowing engine is the Dowlais or the Fleming & Ferguson type, the blowing cylinder outlet and inlet valves being actuated by cams, shaped and cut by machine-cut gearing. The cams should never leave their roller, but give a decided sharp inlet and a decided sharp outlet, so as to give as little as possible loss in clearance, or as little as possible loss in back pressure on the steam cylinders. Times are changed since 50 lbs. was a high steam pressure, and 4½ lbs. was really the maximum, in the West Cumberland district and in Scotland, for the blowing cylinder. In South Wales the blowing pressure was greater, owing to the anthracite coal used. In these modern times, when we must all work at high pressure, all the old low-pressure blowing engines are practically obsolete. In marine practice we work with steam pressures up to 300 lbs. on the square inch. The writer has a testing boiler which is in use to 400 lbs. per square inch. Locomotive practice now is 200 lbs. to 250 lbs., and compounding. In blowing engines the capacity required is so large, and the difference in sizes between the cylinders is so great that increased pressure on the boiler, and from that to the blowing engine, is where first to realize the economy. The writer does not believe in large blowing engines, but he does believe in a blowing engine designed sufficient in all respects to drive one furnace, and have a spare engine for emergencies.

RECENT DECISIONS AFFECTING THE MINING INDUSTRY.

Specially Reported for the Engineering and Mining Journal.

LAW AGAINST RIDING ON CARS IN MINE.—The evident intention of the law of Pennsylvania providing that no person shall ride upon any loaded car in any "slope, shaft or place in or about" is to forbid all persons riding upon loaded cars while in motion, in any part of the mine.—Voshefskey vs. Hillsdale Coal Company (47 N. Y. Supplementary Reporter, 386), Twenty-first Appellate Division of New York.

CLAIM NOT LOST BY DISAPPEARANCE OF STAKES.—That the stakes and monuments as designated in a notice locating a mining claim were not visible at the time of a subsequent relocation does not vitiate the former location, if the law in all other essential requirements has been complied with.—Justice Mining Company vs. Barclay (82 Federal Reporter, 554), United States Circuit Court, District of Nevada.

POSSESSION OF CLAIM NOT LOST BY FAILURE TO FENCE.—Possession of a mining claim is not lost for abandonment by failure to fence it and suspending operations on same for several years, where the possessor always asserted title and claim to same, and always had an agent or watchman in charge of it.—Garrard vs. Silver Peak Mines (82 Federal Reporter, 578), United States Circuit Court, District of Nevada.

LIABILITY OF FOREIGN MINING COMPANIES IN OREGON.—The courts of the State of Oregon have jurisdiction to render a personal judgment by default against a foreign corporation engaged in mining operations in that State, when service of process is made upon it in the same manner as provided by law for the service of domestic companies.—Farrell vs. Oregon Gold Mining Company (50 Pacific Reporter, 186), Supreme Court of Oregon.

WHAT DOES NOT CONSTITUTE ABANDONMENT OF CLAIM.—The repudiation by the locator of a mining claim of the contract under which he located it, and which entitled other parties to a joint interest in all locations made by him, his abandonment of the mine and his notification to the other parties to that effect, do not necessarily constitute an abandonment of the claim by such other parties.—Lockhart vs. Willis (50 Pacific Reporter, 318), Supreme Court of New Mexico.

QUESTIONS AND ANSWERS.

Arizona: J. O. H.—Why has the mining industry of Southern Arizona developed so slowly?

Answer.—A number of reasons might be given, chief among which are comparative remoteness, high cost of transportation, and consequently dear fuel and supplies for working mines; the greater attractions of some other mining States and Territories, which have been more accessible; and possibly also some disappointments among the earlier mines. Arizona presents great possibilities for the future; growth will doubtless come in time.

Talbot Basic Linings: W. N. C.—How are the resin and limestone hearths of Mr. Benjamin Talbot prepared? Is there any description of them extant?

Answer.—Mr. Talbot's United States patent, No. 540,465, dated June 4th, 1895, for lining metallurgical furnaces says briefly that the mode consists in introducing into the furnace, while the same is highly heated, basic material mixed with solid fusible hydrocarbon, the mixture being in a powdered or granular state. You can get further description by obtaining a copy of the patent specification.

Quicksilver Exports: G. W.—What proportion of the quicksilver produced in the United States was exported in 1897 to Mexico and other countries?

Answer.—The exports from San Francisco, the port from which a large part of the shipments were made, included 3,890 flasks to Mexico and 1,445 flasks to Central America. The total exports from the United States in 1897 were 1,007,770 lbs., or about 13,260 flasks. This was over one-half the production; but was less than in 1896, when 1,525,726 lbs., or 20,075 flasks, were exported. In 1896 there were shipments of some 3,000 flasks to China, but that country took none in 1897.

Sulphuric Acid and Iron Pyrites: G. J. B.—Where can I obtain complete data concerning the imports and production of iron pyrites in 1896 and 1897? Where can I obtain a complete list of all the sulphuric acid manufacturers in the United States?

Answer.—Data concerning the production and imports of iron pyrites in 1896 will be found in "The Mineral Industry," Volume V.; for 1897, in the "Engineering and Mining Journal" for January 1st, 1898. The pyrites imported is practically all used in making sulphuric acid, but it is impossible to trace it to the individual consumers. No complete list of the sulphuric acid manufacturers has ever been published.

Sulphur Oil: W. F. E.—I have seen in your review of the New York chemical market recently an importation of sulphur oil. Can you tell me what it is, where it comes from, and for what purpose it is used?

Answer.—This mineral oil is a by-product obtained in refining or melting crude brimstone, and comes chiefly from Sicily, usually from the port of Palermo. It is shipped in "cantars" or casks, and the oil is used for making soap and for lubricating purposes. Flower sulphur of fine quality, when mixed with a lubricant, has been found acceptable for oiling heated bearings of machinery.

Colombia: A. S.—Where can I get information about the mines? Also about the climate and medicines likely to be useful?

Answer.—A great deal of information about Colombia will be found in Volume I. of "The Mineral Industry" and the later volumes. The climate of Colombia varies greatly with location. The lowlands on the coast are generally malarious and unhealthy. The highlands of the interior are generally considered healthy. As in all tropical countries everything depends upon elevation and surroundings. As to your medicine chest, a physician would be the best adviser.

Tungsten: J. F.—Demand and prices; what are its ores and how can I distinguish them?

Answer.—The demand for tungsten is not large, though it is gradually increasing. It is used as an alloy in making steel, and this is the only use of commercial importance. The supplies at present are hardly equal to the demand. Quotations for tungstic acid and ferro-tungsten are given regularly in the "Engineering and Mining Journal." The principal ores of trungsten are the mineral wolframite (Fe Mn, WO_3) and scheelite ($CaWO_4$), of which the former is the more abundant. Wolframite is a black mineral of 7.1 to 7.55 sp. gr., and 5 to 5.5 in the scale of hardness. Sometimes it is weakly magnetic. Scheelite, on the other hand, is a light-colored mineral of vitreous lustre and white streak. Its color may be white, yellowish-white, pale yellow, brownish, and sometimes orange-yellow. Its hardness is 4.5 to 5, and specific gravity 5.9 to 6.076. Scheelite contains 80.6 per cent. tungsten trioxide, against 76.47 per cent. in wolframite.

Bauxite: P. R.—How can I distinguish bauxite when found?

Answer.—According to Mr. H. McCalley, in "The Mineral Industry," Volume II., bauxite has few specially distinctive features except its usual pisolitic or concretionary character. The red variety of bauxite was thought to be a pisolitic iron ore until its true character was shown by analysis. Bauxite is usually a concretionary or pisolitic mineral, though sometimes it is a hard, compact, homogeneous, fine-grained rock, commonly oolitic, and sometimes an earthly, clay-like material. It may, therefore, be hard or soft and friable, compact or porous; but the best grades are hard and have a metallic ring. The concretions vary in size from small peas to large boulders, which are cemented together by fine-grained hard bauxite, bauxitic clay or silicious material. Bauxite varies in color from almost pure white to a deep red or black. It is also of cream and pearl-white color, grayish, yellowish, amber, pinkish, and speckled or mottled. It is nearly always stained more or less with iron. The colors or stains are also sometimes due to manganese or other minerals, and sometimes to organic matter. These colors often shade into one another, sometimes suddenly and sometimes gradually, and it is seldom, if ever, that a bank or deposit is wholly or uniformly one colored ore. As a rule, the lighter colored ores appear to be softer than the darker. The amber, red, black and dark brown ores sometimes have spots as hard as quartz, while some of the white or light-colored ores, especially the impure or bauxitic clays, are almost as soft as clay itself. The hardness of the good ore varies from 1 to 3, while its sp. gr. varies from about 2.40 to 2.55.

IRON TRADE OF FRANCE.—The imports and exports of iron and steel in France for the full year are reported as below, in metric tons:

	—Imports.—		—Exports.—	
	1896.	1897.	1896.	1897.
Pig iron	99,881	160,055	195,308	108,609
Finished iron	43,948	36,784	42,036	55,787
Steel	12,629	9,424	38,854	46,343

In addition to these imports and exports there were also in 1897 temporary imports amounting to 96,574 tons pig iron, 12,889 tons plates and other finished iron and 3,189 tons steel. To balance these there were exported after working 83,004 tons pig iron, 14,617 tons finished iron and 3,676 tons steel.

COVERING FOR STEAM PIPES AND BOILERS.—At the works of Schneider & Co. at Creusot, France, various protecting coverings tried, such as silicate cotton, plastic compositions, etc., did not give good results, besides being costly. Finally experiments were made with a mortar formed of granulated slag mixed with soot taken from the boilers or Cowper stoves. This compound is laid on easily with a trowel, in thicknesses varying from 1¼ in. to 2¼ in., according to the size of the pipes. It is then wound round with felt, and a sheet-steel covering is fitted over the felt for such pipes as are in the open, this casing being replaced by a cloth wrapping where the pipes are sheltered by buildings or shops. This inexpensive method is found to answer admirably, the temperature of the outside of the pipes thus protected being little higher than that of the surrounding air, so that condensation is reduced to a minimum.

COAL IN INDIA.—Some figures bearing upon the progress of India as a coal producer are given in the recently issued report for 1896-97 of the Director General of Railways. The output in that year reached a total of 3,839,018 tons, compared with 3,537,820 tons in the preceding twelve months. The leading collieries are the Kurhurbaree and Sermapore, which last year produced 473,824 tons, against 442,348 tons in 1895-96; the Singareni, worked by the Hyderabad (Deccan) Company, which produced 262,681 tons, against 292,914 tons; the Makum, worked by the Assam Railways and Trading Company, which produced 176,436 tons, against 172,661 tons; the Warora, worked by Government, which produced 121,643 tons against 101,383 tons; the Umaria, also worked by Government, which produced 115,386 tons, against 118,506 tons; and the Dandot, Mohpani, Bhaghanwala, Kost, Shahrigh, Letkonbin and others whose operations are less extensive. There is no difficulty in disposing of the whole annual output among the railways, mills and miscellaneous consumers.

PATENTS RELATING TO MINING AND METALLURGY.

UNITED STATES.

The following is a list of the patents relating to mining, metallurgy and kindred subjects issued by the United States Patent Office. A copy of the specifications of any of these will be mailed by the Scientific Publishing Company upon receipt of 25 cents.

Week Ending February 22d, 1898.

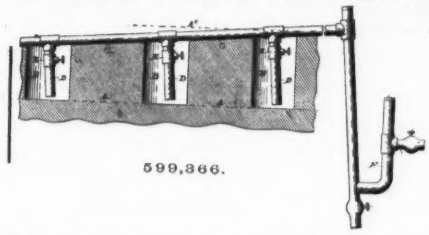
599,310. EXTRACTION OF LEAD FROM ITS ORES. Henry R. Angel, London, England. Assignor of one-half to Charles Henry Thompson, same place. The process consists in mixing and heating the ore with an alkali metal sulphate and carbonaceous matter, as four to six parts by weight of ore to two parts of alkali metal sulphate and one part of carbonaceous matter.

599,336, 599,337, 599,338. MACHINE FOR ROLLING RODS OR WIRE. Abel Kenworthy, Waterbury, Conn. Assignor to the Benedict & Burnham Manufacturing Company, same place. This machine comprises a pair of vertical positively-driven reducing-rolls, an entrance-guide therefor, a second pair of horizontal positively-driven reducing-rolls, a guide between the two pairs of rolls, means for automatically adjusting the speed of one pair of rolls to prevent the wire from being drawn by one pair or forced by the other pair, a coiling device, and a guide between the second pair of rolls and the coiling device.

599,347. ACETYLENE GAS GENERATOR. Peter McMurray, Welland, Canada. A gasometer, and a generator with a lid secured by slidable catches, a ball-cock being secured to the under side of the lid,

to raise the rubber-tipped piston to shut the water off from the spray-holes when the pail is full of water, in combination with the regulator, having a valve spring and arm or lever.

599,366. MINE DRAINING SIPHON. Jerome C. Souleyret, Pargers Lake, Ky. Combination with two or more sump-holes, of a siphon-discharge system, consisting of a main pipe following the drift, depending valved branch pipes entering the sump-holes, a discharge pipe connecting with the main pipe, and a pipe discharge regulator



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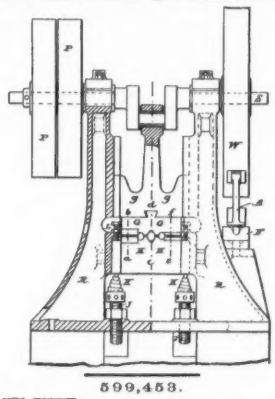
connected with the former pipe and adapted to discharge at different levels.

599,394. ACETYLENE GAS GENERATOR. Henry W. Laun and Ernest E. Laun, Chicago, Ill. Combination with the generator proper, and a single reservoir for gas and water, a service pipe leading from the upper end of the reservoir, a pipe leading from the bottom thereof, and a pipe leading from near the bottom of the generator and connecting with and extending beyond the pipe, a cut-off and an automatic valve in the pipe between the generator and the point of connection with the pipe, and a cut-off in the free end of the pipe beyond the point of connection; of a pipe connecting the reservoir and generator above the water lines therein, an automatic valve in this pipe, a second pipe communicating therewith, and means for supplying air thereto.

599,453. APPARATUS FOR FORGING AND SHARPENING ROCK DRILLS, ETC. Harry C. McDonald, The Jumpers' Gold Mine, near Johannesburg, South African Republic. Combination of the revolving disk with the centrifugal arms or hammers affixed at one



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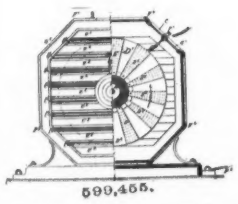
end to the periphery of the disk, the slotted guard-links, the adjustable controlling springs to regulate the blow of the centrifugal hammers, and the fixed anvil.

599,455. APPARATUS FOR PRODUCING OZONE. Marius Otto, Paris, France. The apparatus, comprising a shell or casing, electrodes therein one being movable in relation to the other and adapted to produce and extinguish gradually the discharges at short intervals, means for moving the movable electrode, inlet and outlet openings and electrical connections with a high-tension transformer.

599,487. AMMONIA GAS COMPRESSOR. John J. Bailey, New York, N. Y. Combination with the pistons, the yokes to which they are coupled, and the shaft and crank for operating the same, of the circular



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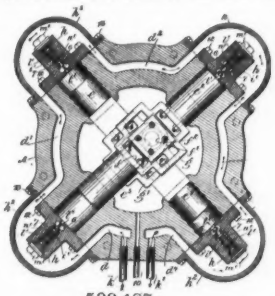

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body having cylinders for the pistons and channels that extend around, in and through the body between the piston cylinders and that are rectangular in cross-section, and have open ends at opposite sides of the cylinders, and form receptacles for cooling liquid, and covers that extend over the open ends of the channels and make the same continuous.

599,506. COMPOSITION OF MATTER FOR PAVEMENTS, ROADWAYS, etc. Job Johnson, Glendale, N. Y. This composition consists of sharp sand, cement, pulverized rock-salt, wood sawdust, graphite mineral earth, and water.

599,544. OIL WELL PUMP. William J. Wright, Pittsburg, Pa. This pump comprises an upper cage and a lower cage, a connecting tube connected to the lower cage and having its upper end projected into the upper cage, the upper cage having a limited free movement on the connecting tube; the anchor tube projected into the lower cage, the lower cage having a limited free movement on the upper end of such anchor tube, the cages having means to engage the wall of the well as they drop therein by gravity, a plunger and a lift-tube joined thereto, having means for engaging and lifting the supporting cage, the plunger having a valve.

599,568. MACHINE FOR POLISHING TIN AND TERNE PLATES. Nathaniel D. Lewis, Joliet, Ill. Combination of a pair of endless sprocket-chain carriers, a suitable frame having sprocket-wheels for supporting and driving the chains, cross-shafts journaled in the chains, clamping jaws journaled at their inner ends on the shafts, gravity-weights attached to the shafts, the toggle mechanism connected with the jaws and shaft, and the guide boxes secured to the frames for engaging the toggle mechanism to open and close the jaws, and the means for driving the chains.

599,577. HYDROCARBON BURNER. John H. White, Arkansas City, Kan. This burner has a cylindrical body portion and a depending open-bottomed sleeve of equal diameter therewith, a mixer tube depending centrally from the body portion within the sleeve and having an open lower end, feed and burner tubes located within the sleeve below the body portion, the burner tube terminating in a valve-controlled burner orifice axially aligned with the mixer tube, a cylindrical chamber rising from the body portion and of less diameter than the same, to form an enlarged cavity in communication with the mixer tube, and provided at its top with an interstitial guard, and a vaporizing tube arranged above and within the circumferential contour of the cylindrical chamber, with its arms arranged within the chamber and in communication with the feed and burner tubes, respectively, to convey fuel from the former to the latter.

599,589. PROCESS OF MAKING EXPLOSIVES. Jonas E. Blomen, Washington, D. C. Assignor to the Joveite Manufacturing Company of Virginia. The improvement consists in treating nitro, and nitrohydroxyl, hydrocarbon derivatives with a volatile organic solvent, adding to the composite solvent thus obtained, cellulose nitrates and an oxidizing agent, and finally drying and granulating the resulting compound.

599,597. REVERBERATORY FURNACE. Henry L. Charles, Butte, Mont. This furnace has a hearth, a flue curved downward from one end of the hearth, a bridge located between the flue and the hearth,

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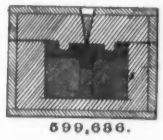
599,597.

and an arch built over the bridge and running transversely with reference to the hearth, the arch having perforations running vertically through the arch and opening at the top of the furnace whereby to regulate the draft passing over the bridge.

599,628. SHEET METAL PIPE. Robert J. Northam, Los Angeles, Cal. This pipe consists of a sheet having a portion of its surface corrugated longitudinally of the pipe, and the whole coiled to produce an inner smooth layer and on outer corrugated layer and spaces between the layers for filling material.

599,636. PROCESS OF MAKING COMPOSITE ARTICLES OF MANGANESE STEEL AND CAST STEEL. Edward Samuel, Philadelphia, Pa. Assignor to William Wharton, Jr., & Co., Incorporated, same place. The process consists in making a cast shape of manganese steel, hardening the cast shape, then placing it in a mold, and cast-



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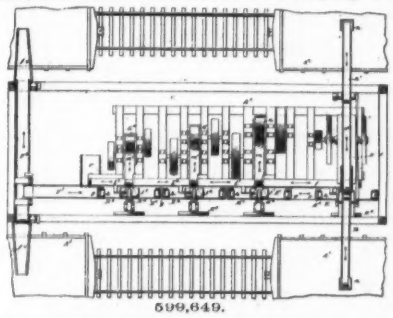
ing molten metal in contact with it, whereby the shape is reheated, then, gradually cooling, the composite structure thus formed, to harden and toughen the manganese-steel shape.

599,649. SAMPLING MILL. Joseph H. Stratton, Salt Lake City, Utah. This automatic ore-sampling apparatus comprises a main supply conveyer, a crusher supplied from the mass of ore by the conveyer, a series of spaced traveling buckets brought successively into the path of the ore discharged from the crusher to receive a portion thereof, an offtake-conveyer for conveying the ore which falls between the buckets, to a car or other place, a second crushing mechanism, a carrier mechanism for conveying the contents of the



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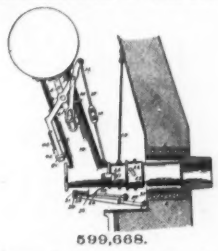
buckets, as discharged thereon, to the second crusher and a second series of buckets similar to the first and receiving portions of the ore discharged from the crushing mechanism, while the remaining portions are delivered through the spaces between the buckets to the offtake-conveyer.

599,668. BLAST PIPE AND BRIDLE FOR BLAST FURNACES. Thomas E. Beaghan, Shenandoah, Va. Assignor of one-half to Hubert B. Reid, same place. Combination of hangers extending from the main, an intermediate section or pen-stock pivotally supported in



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the hangers, an independently pivoted operating lever, pivoted arms extending from the lever to the intermediate section, and blast connections extending from the air-blast main and furnace.

PERSONAL.

Mr. Edward Brennan has been re-elected mine inspector of the Shamokin coal district in Pennsylvania.

Mr. Thomas Bradley of Philadelphia, a member of the Union Hill Company, is visiting in Deadwood, S. D.

Mr. Allan C. Washington plans to start for Utah and Nevada next week to visit the Horn Silver and Austin mines.

Mr. H. E. Galton of Central City, Colo., has gone to Georgia to look after some mining property for an English syndicate.

Hon. T. Mayne Daly of Rossland, B. C., has been re-elected president of the Brandon & Golden Crown Mining Company.

Mr. J. G. Jacobs of Salt Lake is in New York on mining business. Before going West he is thinking of visiting the gold regions of Georgia.

Mr. Frank Wilson, president and manager of the April Fool mine and mill at De Lamar, Nevada, is in Salt Lake, Utah, on business for his company.

Mr. Thomas F. Walsh, owner of the Camp Bird mine, in Ouray County, Colo., has started on an extended visit to New York and other cities in the East.

Dr. W. J. Nelson of Boston, who is erecting machinery for the milling of gold and silver ores in the Eagle Valley district, Lincoln County, Nevada, is at present in Salt Lake, Utah.

Mr. Thomas Brown, Jr., who has been for some time past located in Atlanta, Ga., has been appointed chemist to the Cerrillos Smelting Company at Cerrillos, N. M.

Mr. Simon Bamberger returned to Salt Lake last week from a business trip to Cincinnati, where he found a good feeling prevailing toward the better Utah mining ventures.

Mr. Edwin C. Holden, recently of New York, has been appointed assistant engineer for the London & British Columbia Gold-fields, Limited, and has his headquarters at Nelson, British Columbia.

Mr. C. H. Thompson, recently assistant engineer of the Sunday Creek Coal Company, at Corning, O., has been appointed engineer and chemist of the Victoria Iron Company, at Covington, Va.

Mr. S. M. Green, president of the Milwaukee & Southeastern Railway, is in San Francisco, Cal. Before his return to the East he will inspect a mine in Sierra County, purchased by him about two years ago.

Mr. Frederick North, mining engineer of London, it is stated will visit the West Kootenay district early the coming spring for the purpose of examining properties in the interest of English capitalists.

Mr. E. H. Airis is again in Salt Lake after a brief sojourn on the Pacific coast. Together with President Dern of the Mercur and others he is interested in a mining undertaking in Sis-Kiyou County, Cal.

Mr. C. Rutherford, a mining engineer of Buluwayo, Matabeleland, South Africa, has been in Ottawa, en route to the Kootenay, where he will inquire into the mining resources of the country as a probable field for investment.

Messrs. C. S. Otjen, P. J. Somers, Howard Bosworth, W. H. Richardson, John Graf, Geo. W. Kiles and Dr. Wilmot F. Miller of Milwaukee, Wis., recently returned from a 10 days' trip to the San Juan country in Colorado. The gentlemen own land interests in gold mining property at Telluride.

Mr. Edward P. North has resigned his position as consulting engineer to the Bureau of Highways in the Park Department of New York city. This is a distinct loss to the city, as Mr. North has for years made a special study of road construction, and has done excellent work during the time he has held office.

Mr. J. T. Hill, general manager of the Tennessee State coal mines at Brushy Mountain, resigned his position on February 1st. Mr. A. H. Wood has now been appointed to succeed Mr. Hill as manager of the operating department, and Mr. Robert Burrow manager of the commercial department. The offices are at Petros, Tennessee.

Mr. J. M. Barasch, mining engineer, has been in New York this week on his way from Paris to British Columbia, in the service of the Lillooct, Fraser River & Cariboo Gold-fields, Limited. He will also probably examine and arrange for the purchase of other properties in British Columbia. The mines of this company are reported as doing well, especially the Sunshine.

Mr. Joseph Squire, the well-known mining engineer, of Helena, Ala., we are pleased to learn, has resumed his field work, after having devoted the greater part of the past four years to office work on the Alabama minerals. Mr. Squire was the pioneer mining engineer in the Alabama coal fields, and to his painstaking industry we owe the first accurate map of the Cahaba coal field. He is especially familiar with the coal and iron of the South, and especially of Alabama, and his opinions are based upon practical knowledge and honesty.

OBITUARY.

James Dougherty, a pioneer of the Cripple Creek district in Colorado, died at Victor on March 2d, aged 70 years.

Cornelius O'Donnell, a well-known colliery manager of Pennsylvania, died at Sugar Notch recently, aged 49 years.

David J. Lykins, a pioneer of California, died at Longmont, Colo., on March 2d, aged 69 years. He was also well known in Colorado and Missouri.

Henry Derst, a prominent citizen of Hinsdale County, Colo., died February 31st. He was a native of Pennsylvania, but had lived in Colorada since 1879. He was an owner of the Lettie mine in Hinsdale County.

Thomas J. Bourke, a well-known mining man of Gilpin County, Colo., died at San Diego, Cal., on March 1st. He was interested in the Vendome Gold Mining Company, operating the Hubert property at Nevadaville. He also held interests in mines at Cripple Creek and Leadville, Colo.

James H. Carpenter, founder of the Carpenter Steel Company, died at his residence in Reading, Pa., March 6th, aged 51 years. He was a graduate of the Naval Academy, and served with distinction in the civil war. In 1879 he became interested in the manufacture of steel, and in 1888 began the manufacture of "Carpenter" steel, that has become so widely known as a material for armor-piercing projectiles.

John F. Armstrong, one of the best-known mining men of the Lake Superior iron region, was instantly killed by falling 400 ft. down No. 1 shaft at the Lake Superior hematite mine near Ishpeming, on March 3d. He was at one time employed in the offices of the old Cleveland company at Ishpeming. Afterward he entered the employ of the Minnesota Iron Company, and had charge of several mines on the Mesabi. During last summer and fall he was in the Black Hills, returning to Lake Superior in December. The exact cause that led to his terrible death is unknown. Pleasant, honest and straight-forward, he left many friends. He was about 36 years old and unmarried.

SOCIETIES AND TECHNICAL SCHOOLS.

Massachusetts Institute of Technology.—At the last meeting of the Society of Arts, Mr. Henry B. Wood, Chief Engineer of the State Topographical Survey, read an entertaining paper on "State, Town and City Boundaries." He read extracts from the records of early surveys, described the present methods of surveying the State line between Massachusetts and New York by the use of the heliotrope, the fortunate recovery of the missing stations in the system of triangulation for Western Massachusetts, and the way in which the town boundaries of the State are being settled and a permanent and accurate record of them made.

Columbia University.—Mr. Joseph Florimond Loubat of New York has given the university a piece of real estate on Broadway, valued at $1,100,000, to be used after his death to put the Columbia Library on a lasting foundation. The trustees have accepted the gift and its condition it carried, that the university should pay the donor $60,000 a year during his life. Upon Mr. Loubat's death the property or its proceeds, less any excess of its income which the university may have had to advance to make up the $60,000 annuity, will constitute an endowment fund for the maintenance and support of the library, under the name of the Gaillard-Loubat Library Endowment Fund, in memory of the parents of Mr. Loubat.

Engineers' Club, of St. Louis.—A meeting was held March 2d. Thirty-one members and eight visitors were present. Mr. William Anderson Caldwell, Jr., was elected a member of the club. A motion was made and carried that the profits in the publication of the 1898 "Bulletin" be used as an entertainment fund. The paper of the evening was by Mr. William H. Bryan, entitled "Recent Improvements in Steam Ferries." After reviewing the objects of ferries and the different methods which had been used in their operation, the author described a steam ferry boat recently put into operation in St. Louis, called the "Andrew Christy," that embodies some radical changes in Mississippi River ferry boat construction. The paper was well illustrated by drawings. An informal discussion followed, participated in by Messrs. Ockerson, Flad, Fish, Crosby, McMath, Russell and Kinealy.

Washington Academy of Sciences.—This association has been incorporated with power to hold real estate, maintain a library and other similar powers. A nucleus of 75 members elected by the Joint Commission held the first meeting of the Academy on February 16th, when officers were elected as follows: President, J. R. Eastman; secretary, G. K. Gilbert; treasurer, Bernard R. Green; managers, Alexander Graham Bell, Frank Baker, F. W. Clarke, C. Hart Merriam, H. S. Pritchett, George M. Sternberg, Charles D. Walcott, Lester F. Ward and Carroll D. Wright. The seven vice-presidents will be nominated by the seven affiliated societies—Anthropological, Biological, Chemical, National Geographic, Geological, Entomological and Philosophical. The nucleus of 75 will probably be considerably enlarged at the next meeting by the addition, as original members, of persons nominated by a committee appointed for that purpose at the last meeting.

Federated Institute of Canadian Mining Engineers.—The second annual meeting began in Montreal March 2d. The morning session was devoted to routine business. At the afternoon session Dr. B. T. A. Bell of Ottawa, secretary of the Institute, called attention to the legislation now before Parliament for placing a duty on Canadian ores exported to the United States. He referred particularly to the nickel industry, and said that, as a matter of public policy, an export duty was wrong and did not deserve either the sympathy or the support of any liberal-minded mine owner or manager in the Dominion. To levy such a duty would simply mean that instead of Canadian nickel finding a market in the United States, which was the market for it, it would be supplanted by the ores from New Caledonia. George E. Drummond of the Canada Iron Furnace Company, Limited, at Radnor, Quebec, delivered his presidential address, in which he reviewed the work of the institute and dwelt upon the rapid expansion in recent years of the mining industry in Canada.

J. Obalski, inspector of mines of Quebec, contributed an interesting paper on "Mining in Quebec in 1897," followed by T. C. Loring of Rossland, B. C., on "Mining Law and Its Bearing on the Development of Mines and Mining Districts."

At the evening session talks were given on Klondike by two miners, C. J. Christie and Fred Hyde, who have recently returned.

Spencer Miller of New York presented a paper, illustrated with a series of lantern slides, on "Cableways as Applied to Open Pit Mining." The session was closed with a contribution by Percy Butler of Montreal an "The Moebius Process for Parting Gold and Silver as Carried On at the Guggenheim Smelting Works."

On Thursday morning some business was transacted, and in the afternoon John Birkinbine of Philadelphia presented a paper on "Commercial Progress as Influenced by the Development of the Pig Iron Industry." It was discussed by Harvey Graham of Nova Scotia and by others, and was followed by a paper by Hamilton Merritt of Toronto on "The Gold Bearing Reefs and Placers of Northern British Columbia." Dr. W. L. Goodwin, of Kingston, made a preliminary announcement relative to a new mineral which is remarkable as containing some tin and a series of the rare earths, including cerium, didymium and yttrium.

Mr. A. Blue, Director of Mines for Ontario, presented statistics of the production of that province, data relative to the nickel industry and to the use and cost of acetylene.

In the evening there was a banquet, at which George E. Drummond presided.

At the Friday morning session the following resolution was passed after discussion: "That a committee be appointed to draft and present to the Dominion Parliament and other proper channels a petition setting forth as being the sense of this Institute (representing, as it does, the mining and kindred industries of Canada) the desirability of the fact that an efficient import tariff should be placed on lead and lead manufactures by the Canadian Government."

After discussion, also, a new constitution was drafted, and a reorganization was effected under the title of the Canadian Mining Association. The following officers were elected: John E. Hardman, Montreal, president. W. A. Carlyle, British Columbia; Charles Fergie, Nova Scotia; John Blue, Ontario; Dr. George M. Dawson, Quebec, vice-presidents. A. W. Stevenson, Montreal, treasurer. B. T. A. Bell, Ottawa, secretary. The council, composed of four representatives from each province, were named as follows: Nova Scotia, Henry S. Poole, R. G. Leckie, Clarence Dimock, W. M. Libby; British Columbia, John B. Hobson, Frank C. Loring, William Blackmore, R. G. McConnell; Ontario, Archibald Blue, James McArthur, Fred. Snyder, Hamilton Merritt; Quebec, G. E. Drummond, George R. Smith, John Penhale, J. Obalski.

INDUSTRIAL NOTES.

The Carpenter Steel Works, at Reading, Pa., are working double time.

The Custer City Chemical Company has been incorporated in McKean County, Pa. Capital, $50,000.

The Harvey Steel Company of Harvey, Ill., has been placed in the hands of receivers, on a judgment for $58,000.

The Myers Chemical and Manufacturing Company has been incorporated at Columbus, O. Capital stock, $10,000.

The Delaware Iron Works at Newcastle, Del., are to begin running again March 14th, after a suspension of four months.

The Virginia-Carolina Chemical Company, of Richmond, Va., has recently declared a dividend of 1 per cent. on its common stock, payable in March.

The Rogers Locomotive Works, in Paterson, N. J., have just completed 15 locomotives for the Sanyo Railroad in Japan. The engines are now being shipped at Jersey City.

The Consolidated Chemical Company of San Antonio, Tex., has been incorporated. Capital stock, $5,000. Incorporators, Albert Kroukosky, George R. Gersdorf and James E. Harper.

The Laxzene Chemical Company of Buffalo, N. Y., has been incorporated to manufacture medicines. Capital, $3,500. Directors, William S. Grimes, J. S. Holmes and George B. Schicker.

The Emory Coal and Coke Company of Knoxville, Tenn., has recently been incorporated with a capital stock of $50,000, by D. B. Bean, Charles A. Weller, Alex. McMillen, J. S. Rayl and A. B. Melton.

The Liberty Chemical Company of Philadelphia, Pa., has been incorporated. Capital, $1,000. Directors, E. J. Gallagher, Jr.; C. F. Marze, Joseph McCutcheon, W. H. Sutton and H. R. Weyant.

After a sharp competition with German makers, who have furnished Russia many locomotives, an order for engines for a surburban road in Russia has just been awarded to H. K. Porter & Co. of Pittsburg.

The Reading Iron Company is building at Reading, Pa., on the site of its Keystone No. 1 furnace, what will be one of the largest anthracite furnaces in the Schuylkill Valley. It will have a capacity of 1,400 tons a week.

It is reported that the H. W. Johns Maunfacturing Company will consolidate its Cleveland and Cincinnati agencies and have a single agency for the State, to be located at Columbus, O. W. E. Farshee will be the manager.

The Robins Conveying Belt Company of New York has successfully completed for Austria a conveying belt plant with a capacity of handling 1,100 tons of stone per hour. This company has also in hand contracts for seven of its conveyors, ranging in length from 300 to 750 ft. between centers.

The Erie Railroad has placed an order with the Michigan Peninsular Car Company for 1,000 box cars and 1,000 twin hopper gondolas for coal and ore trade. The new cars will be fitted with air brakes and automatic couplers, and have center bearing trucks.

The Thymo Chemical Company of Columbus, O., has been incorporated by T. S. Brooks, E. C. Wendt, H. H. Humphrey, T. D. Huntington and John F. McIntire. The capital stock is $10,000, and the company proposes to make and sell drugs and chemicals.

The Willson Aluminum Company has doubled the capacity of its factory for manufacturing calcium carbide at Holcomb Rock, Va., and has orders on hand for a long time ahead. Its output of calcium carbide since January 1st amounts to over 3,000 tons.

At a meeting of the Milwaukee brick manufacturers recently it was decided to advance the price of brick from $5.25 to $6.50 per 1,000. The local prices of brick, before the disbanding of the Milwaukee Material Company, a brick trust, about a year ago, went up to $8 per 1,000.

The J. M. Blair Brick Company of Cincinnati has made an assignment to the Union Savings Bank and Trust Company. Assets consisting of the company's plant are nominally $100,000, to which may be added money due from its debtors. Liabilities are: Bonded debt, $25,000; other debts, $45,000; total, $70,000.

Negotiations are now on with the Westinghouse Electric and Manufacturing Company for the electrical equipment for a large power plant being constructed by the British Government at Assouan Cataract on the Nile River, Egypt. The equipment will include about 25,000 H. P., costing approximately $400,000.

The Pittsburg Fuel Gas Company is to build a $100,000 plant on the South Side at Pittsburg. The company intends to manufacture 10,000,000 cu. ft. of water gas daily for the iron mills and factories nearby. The only by-product will be sulphate of ammonia. The incorporators of the company are Joseph Keeling, Patrick Ridge, W. A. Dinker, Frank L. Slocum and W. P. Potter.

The Lackawanna Iron and Steel Company recently held its annual meeting at Scranton, Pa. The statement was made that the profits on coal amounted to $239,642. In spite of this, however, the company's net loss amounted to $992,899, showing that it operated its works, outside of coal mines, at a loss of $1,232,541. The company's surplus, which in the six years 1891-1896 had risen to $1,356,689, was reduced to $363,790, and even this surplus lay largely in unsold rails on hand. W. W. Scranton was dropped from the board and Austin Blair put in his place. A motion to print the annual reports and send a copy to each stockholder was made and voted down.

The Societe Anonyme des Railways Economiques de Liege Seraing et Extensions, and the Compagnie Generale des Railways, a Voie Etroite of Belgium, have just ordered a complete electrical equipment from the Westinghouse Electric and Manufacturing Company for a storage battery system traction road in Ostend, Belgium, which promises to prove remarkably successful. The generating plant will consist of a 60-H. P. compound high-pressure engine, connected with a Westinghouse multipolar dynamo of 38 kw. capacity, making 600 revolutions a minute and producing a current of 280 volts. The cars are to be equipped with a group of batteries and will be able to run 40 miles before recharging. A complete Westinghouse system, with switchboards, will be placed in the generating station.

MACHINERY AND SUPPLIES WANTED

If any one wanting machinery or supplies of any kind will notify the "Engineering and Mining Journal" of what he needs he will be put in communication with the best manufacturers of the same.

We also offer our services to foreign correspondents who desire to purchase American goods, and shall be pleased to furnish them information concerning goods of any kind, and forward them catalogues and discounts of manufactures in each line.

All these services are rendered gratuitously in the interest of our subscribers and advertisers; the proprietors of the "Engineering and Mining Journal" are not brokers or exporters, nor have they any pecuniary interest in buying and selling goods of any kind.

GENERAL MININQ NEWS.

Oil Production and New Wells.—February has been the dullest month in three years. Low prices ruled nearly throughout most of the month. The later increase stimulated operators somewhat, and they are now hastening the erection of derricks and pushing the drill in the principal fields. The Oil City "Derrick" summarizes the operations in February as follows: In the New York, Pennsylvania and West Virginia field there were completed in that month 237 new wells, with a daily production of 5,198 bbls., and on March 1st 484 wells were under the drill. The Buckeye, O., field completed 88 new wells in February, with a daily capacity of 2,105 bbls., and at the end of the month 143 wells were at work. The Southeastern, O., field showed that 18 new wells were completed last month, having a daily output of 49 bbls., and on March 1st 15 wells were drilling. The Indiana field reports 23 new wells completed in February, with a daily production of 500 bbls., and at the end of the month it had 37 wells under the drill.

The Standard Oil Company has just fixed the following prices: Tiona, 92c.; Pennsylvania, 82c.; Barnsville, 72c.; Corning, 65c.; Newcastle, 57c.; North Lima, 60c.; South Lima, 55c.; Indiana, 55c.

ALABAMA.

Tallapoosa County.

Alabama King Mining Company.—Report says that the Bonner-Terrell gold mine, 12 miles from Alexander City and 5 miles from Dadeville, is now being worked by the present owners. The officers of the company are: S. B. Bennett, of Atlanta, Ga., president; Dr. H. J. Cameron, Alexander City, Ala., vice-president and consulting engineer; C. H. Scofield, secretary and treasurer; H. C. Crippen, general manager. Capt. Galbraith is in charge of the property. This company has purchased 3 carloads of machinery, which is now in place, consisting of a battery of three 40 H. P. boilers, one 75 H. P. engine, 10 stamps, hoist, elevators, dynamo for lighting its mines and mill, concentrators, etc. A cyanide plant is to be added in the near future.

ALASKA.

A recent letter in the New York "Evening Post" gives the following particulars about the situation at Dyea and Skaguay: "The trails across the Chilcoot and White Passes are practically impassable because of the frequent and severe storms, and will not be in good condition until about the 1st of April. The result is that thousands of men and thousands of tons of supplies and mining outfits are crowded together on this side of the summit, creating a blockade. Those who took an early start did so because they feared a blockade, and were anxious to get over the summit, expecting to wait at the lakes for the opening of the river to navigation. The blockade they hoped to escape has come upon them, and they are not over the summit yet. Many have spent a month of hardship and toil, and are worse off because of it than are the newest arrivals.

"There are not less than 20,000 people in Dyea and Skaguay encamped along the trails. The quantity of supplies, outfits, boats, machinery, etc., averages not less than a ton to each man. By the 1st of April, when the work of getting over the summit will begin in earnest, there may be 50,000 persons and 50,000 tons of freight there.

"The only thing accomplished on the Skaguay trail to make it more passable has been the building of some small bridges and some improvements on the road from Skaguay. There has been a tramway project there, but no progress has been made with it. The indications are that the Skaguay trail will not be materially better than it was last summer, when it was rendered practically impassable by 3,000 or 4,000 people and their outfits. Of course, as long as the snow lasts in the spring, the trail will be a better one than when the traveler has to encounter mud and boulders.

"As for the trail from Dyea, which is the one experience has provided to be the best, two tramways are under construction for the transportation of goods. One of these has a tram-railroad from Dyea to the base of the Summit Ridge, and an electric-bucket system across the summit to Lake Lindemann. The other has two tramway cables leading from the first and second divides and ending at Lake Lindemann. Connection between the last of these and Dyea will be made with wagons and pack-animals. Neither of these enterprises is ready for operation, and the possibilities are that they will not be so much, if any, before the 1st of April. When in complete operation, their combined capacity will not exceed 400 tons per day. Assuming that by the use of pack-animals 100 tons per day could be taken over the White Pass from Skaguay, this leaves the total capacity of all facilities provided for both passes at 500 tons per day. This means 100 days for transporting 50,000 tons that will be accumulated there by the 1st of April. In other words, accumulations could not be cleared away before the middle of June. The probabilities are, however, that during the months of April and May, an equal quantitiy of new freight would demand attention

"If people so interfered with each other last fall as to create a blockade on both trails, with less than 6,000 people attempting to go over, it does not require a great flight of imagination to see the utter blockade that would be created by 50,000 people.

"There are already indications of a desire on the part of gold-hunters to abandon their idea of going to Dyea and Skaguay, and to strike for the Copper River and Cook's Inlet. Beyond doubt, this tendency will rapidly increase as the crowded condition of the passes becomes better known.

"Attention has also been turned in the direction of the route by Fort Wragner and Stickine River, Telegraph Creek and Teslin Lake, but, as yet, facilities have not been provided. For this season at least, only such travel can go over the Stickine route as can be handled by pack-animals. Possibly several thousand people will attempt this route, with the probability that a large portion of them will make a failure of their effort.

"Undoubtedly a great many who intend to go to Alaska are waiting to take the ocean and river route. Here there is as much uncertainty as on the passes. The facilities have yet to be provided. Possibly as many as fifty small steamers are under construction or have been purchased for use on the Yukon, but navigation of that river is expensive and dangerous. Channels are narrow and tortuous and known only to a few people. Fuel is very difficult to procure, and it is understood that the companies already operating on the river have secured all that can be had for several hundred miles from the mouth of the stream. These companies will not take miners' outfits, preferring to take in goods for their own stores and sell them to miners after they get there. Consequently miners wishing to take outfits will have to depend on independent boats. Certainly, one going by that route should not undertake it unless the transportation company contracts with him to carry him clear through to his destination."

The United States Senate has passed the bill extending the homestead laws to Alaska.

It is said that it is quite certain the Rothschilds will attempt to build a road from the

coast to the gold fields. The steamer "Walcott" recently landed a party of over 40 men and equipments for railroad building at Pyramid Harbor. S. O. Onderdonk, the engineer in charge, immediately ordered the men to locate and build houses to hold the town sites. The place had been surveyed in January, and a plan of the district was submitted at that time to the Surveyor General of Alaska. There was filed a notice that a grant from the United States was wanted for a railroad terminal trading post and factory and for a right of way for a railway over the Dalton trail. The transactions were accomplished in the name of H. Bratnober.

Mr. Onderdonk reports that the grades are several per cent. less on the Dalton trail than on the Canadian Pacific, and that the climatic obstacles are no more difficult to overcome.

Northwestern Transportation and Trading Company.—Chicago capitalists who are identified with this company have launched a new enterprise with the purpose of obtaining control of the traffic on the Yukon River between St. Michael and Dawson City. Seven distinct companies, with an aggregate capital of $330,000, were incorporated recently. They are the Healy Transportation Company, the Klondike, the Weare, Cudahy, Power, Hamilton and the Barr Transportation companies. The incorporators are Robert F. Pettibone, George J. Douglas and Carolyn Bartee. Mr. Pettibone says the purpose of the new companies is to buy the steamboats and barges on the Yukon and to operate them.

Snow and Ice Transportation Company.—According to dispatches from Portland, the whole scheme of this company has been abandoned, and settlements are being made with those who bought tickets for the trip to Dawson. Messrs. Lumley & Hanna, Seattle, agents of the company, were tried for obtaining money under false pretences and discharged, the Court ruling that no fraudulent intent had been shown.

Copper River.

Capt. Hardwick of the steamer "Alliance," that arrived at Seattle recently, reports that everything was quiet when he left. Prospectors were going over the Valdes Pass, and the trail was reported to be in good condition. The residents of Copper City had organized a court for the purpose of dealing with law-breakers. In the case of murder the penalty was to be death. In all cases of larceny of over $100 the penalty was to be the same as that for murder. Under $100 complete restitution was to be made, and to the offender was to be given ten days in which to get out of the country.

Arrangements are under way for the shipment of 200 reindeer, bought for the Government relief expedition, from Seattle to Copper River. The reindeer are to be used on an exploring expedition up the river and over the passes to the Tanana River and the Yukon.

The steamer "Valencia" left Seattle for Copper River on March 6th with 600 passengers. Most of them came from the East, where a great deal of literature about the alleged gold fields along the river has been circulated.

(From Our Special Correspondent.)

The sailing of the "Valentia" for the Copper River calls for some comment. From the authority of those who have engaged in the business of canning salmon at the mouth of the Copper River for the past ten years, we can confidently say that no white man has ever navigated the Copper River more than 50 miles from its mouth, and as to going up along its banks we will quote from a letter recently received from C. P. Sprague, who is now en route to the head waters of the Copper River. He says: "No white man was ever up Copper River, nor was any gold found there. Everything that has been published about Copper River has been made up. The Indians come down the river in March. They all say there never was a white man up there. I could not give any one advice about coming here. There may be gold, but certainly no one has ever been there to tell. All the letters we saw in the papers about Copper River were false. This man Robinson we heard so much about was never here at all, and had not seen the river, and is only eight miles ahead of us now. Buck, who was finding so much gold up here, was never on Copper River and never started for it. I hope none of the other boys will start for this region, for it is all a fake as far as any one knows. Now if you hear any one say he has made a find on Copper River you can tell him he is a liar at once, unless he is a Stick Indian."

Kotzebue Sound.

(From Our Special Correspondent.)

Several sailing vessels with small steamboats on board are preparing to sail for the Kotzebue Sound country from San Francisco about May 1st. The pioneer, Capt. Cogan, who owns the clipper "Alaska," has already booked that vessel to its full capacity, and has chartered the clipper "Northern Light." The Linde-Hough Company will also send the bark "J. A. Falkenburg" to the same point. This country is unexplored, except by Lieut. G. M. Stoney, who headed the Naval Expedition in 1885 and 1886.

ARIZONA.

Cochise County.

Copper King Mining Company.—The shaft is now down 570 ft. A small body of peacock copper was uncovered recently; its extent has not been determined yet. The company is considering the erection of a 100-ton smelting plant at Bisbee. We have received a great amount of "boom" literature concerning "The Copper King" mine, near Bisbee City. We have not been able, however, to verify the statements of value and would accept them with much allowance. The object of the literature is so evidently to induce purchases of the stock we would be rather inclined to leave it severely alone unless we had the statements confirmed by disinterested experts. Editor E. and M. J.

Middle March Company.—This company, in the Dragoons, is erecting smelting works, which are now nearly completed.

Maricopa County.

Miners' Association.—The recently organized Maricopa County Miners' Association has Dr. J. M. Ford president, H. E. Kemp vice-president, F. A. Farish secretary and Messrs. B. Heyman, P. P. Parker, Thomas Farish, F. B. Devereux and M. Yocum, executive committee.

Mohave County.

Oro Plata.—Sinking at this mine, near Kingman, has been resumed.

Temple Bar Consolidated Mining Company.—Two 100-H. P. boilers and machinery have been shipped to the mines of the company on the Colorado River.

Pima County.

El Plomo.—The mines have closed until the mill has been moved nearer the mine and enlarged. A tramway is to be put up. The shaft is down 350 ft., and the mine is said to have a large amount of free milling ore in sight.

Old Glory.—The 30 stamps of this mill, in the Oro Blanco, are dropping steadily; 65 men are employed.

Yavapai County.

Jerome Copper Company.—Three carloads of mining machinery have been shipped from Denver for use at this mine.

Yuma County.

King of Arizona.—As efforts to get a water supply have accomplished little, it is stated that the owners of this gold property are to run a tramway from the mine to the present mill site at Mohawk, a distance of 30 miles. The principal item in extracting the gold at present is the cost of hauling the ore this distance in teams.

Miners' Convention.—Representatives of but 5 counties met at Phoenix on March 1st. W. S. Adams of Jerome was elected temporary chairman, and F. D. Devereaux of Phoenix secretary. Dr. J. M. Ford, president of the Miners' Association of Maricopa County, charged that the call for the convention was due to partisanship and moved an adjournment sine die, but a substitute motion prevailed calling for a meeting at Phoenix soon to organize a permanent association. The following were appointed a committee to take charge of the matter: J. M. Evans, W. A. Rowe, R. A. F. Penrose, G. Dennis, Wiley E. Jones, G. W. P. Hunt, Geo. W. Cheney, P. R. Brady and J. H. Carpenter.

CALIFORNIA.

Calaveras County.

(From Our Special Correspondent.)

Empire Consolidated Mining Company.—A suit which involved the property of this company, located 3½ miles northwest of Copperopolis, was brought to an end by a decision rendered recently, under which the above company must pay the First National Bank of Oakland, Cal., the amount the bank paid out on judgmenst amounting to $5,000 within 30 days. The bank will then execute deeds to all the property involved.

El Dorado County.

(From Our Special Correspondent.)

Golden Rule.—This mine, about 8 miles east of Greencastle, has been bonded by San Francisco parties, who have commenced development work.

Kern County.

(From Our Special Correspondent.)

Several old mines in the Caliente and Walker Basin sections of this county, which were abandoned by the Mexicans, are now being either prospected or worked again.

Yellow Aster Mining Company.—The company has now about 135 men at work on its property at Randsburg. A 15-ft. ledge was struck recently that assays well.

Mono County.

Standard Consolidated Mining Company.—At the annual meeting in San Francisco, February 28th, the old management was re-elected, with the following directors: P. N. Lilienthal, W. H. Oscanyon, N. Westheimer, S. E. Scheeline, C. E. Paxton, S. L. Ackerman and J. W. Pew. P. N. Lilienthal was re-elected president, W. H. Oscanyon first vice-president, N. Westheimer second vice-president, J. W. Pew secretary and R. G. Brown superintendent. The company has $55,780 on hand. A dividend of 10c. per share was declared, payable here and in New York, March 28th.

Nevada County.

(From Our Special Correspondent.)

Gold Hill.—The shaft at this mine, on the edge of Nevada City, which is now down 750 ft., is to be continued at least 500 ft. deeper. The new air-compressor operates the pumping, hoisting and drilling plant. A large force of men is employed.

Placer County.

(From Our Special Correspondent.)

Eureka.—At this drift mine, 3 miles north of Sunny South, which comprises 3,600 acres, the tunnel is now in 2,350 ft. In the first 27 days, with a double shift of men, 207 ft. were run, mostly through slate, but quite a distance through very hard rock. Felix Chappellet, Jr., is superintendent.

San Diego County.

(From Our Special Correspondent.)

Helvetia.—This old mine at Julian, which was recently pumped out and retimbered, is running a 10-stamp mill on ore which is said to average $22 per ton.

Shasta County.

(From Our Special Correspondent.)

Brunswick.—At this mine, 5 miles west of French Gulch, the development work consists of two tunnels, both on the vein, and a crosscut which will be extended about 400 ft. to reach the vein. A 14 H. P. boiler and a 12 H. P. horizontal engine are now on the way to the mine, and will be used during the dry season to operate the mill. The property comprises 5 claims, and is located at an elevation of 4,000 ft.

Sierra County.

(From Our Special Correspondent.)

Bald Mountain Extension.—This drift property, comprising 1,600 acres, located 2½ miles east of Forest City, is being worked by a large force of men. Late reports say that pay gravel has been struck again.

Siskiyou County.

(From Our Special Correspondent.)

Golden Jubilee Mining and Milling Company.—This company has been incorporated, with a capital stock of $200,000. The company will operate on the Salmon River, in this county and in northern Trinity County.

Trinity County.

(From Our Special Correspondent.)

La Grange.—At this hydraulic mine at Weaverville the entire working force has struck on account of a reduction in wages. Superintendent William H. Radford has endeavored to fill the places of the strikers, but has been notified by the men that this will not be allowed. The excitement runs high, and violence is feared if new men are brought in. This mine, which comprises 3,000 acres, is owned by a French syndicate, of which Baron La Grange of Paris is president. The greatest pipe system syphon in the world was recently completed here, and the two-mile tunnel in course of construction would have been finished in a few weeks.

Tuolumne County.

(From Our Special Correspondent.)

Brawn.—The two compartment shaft (4½ by 8½ ft.) at this mine, on the mother lode, near Robinson's Ferry, is now down 100 ft. This depth was reached in 30 days, by 6 men, under Superintendent William Rule.

Piute.—At this mine on the north fork of the Tuolumne River, 4 miles northeast of Carters, a crosscut tunnel is being run to tap the vein. If developments warrant, a modern plant will be put in.

Ribbon Rock.—On this property, near Carters, which comprises several locations, a new tunnel has been driven 450 ft. At the 400 ft. one vein was cut, which was composed of the ribbon rock which gives the mine its name. The ore is fair, and the tunnel will be continued until the other vein is encountered.

Spring Gulch.—A dam in Hunter Canyon is being built, and the mine will now be worked by means of a crosscut tunnel, which will tap the ledge below the old workings. An air compressor and drill plant have been contracted for, and work will soon begin. This mine is 2½ miles southeast of Carters.

Tuolumne.—This claim on Spring Gulch, on the Providence vein, one of a group of four, is being developed by the Ralph Bros. The shaft is now down 75 ft. on a vein that shows 3 ft. of ore. At the 100 ft. drifting will begin both ways on the vein. Assays of ore from the bottom of the

shaft give $25 per ton free milling, besides the sulphurets.

COLORADO.

Boulder County.

Doss Mining and Milling Company.—This company, with a capital stock of $100,000, has been formed to work the old Doss property at Wall Street camp, formerly known as the Bald Prairie, that was opened in 1861. The ore is sulphide, carrying lead and zinc. The directors of the new company for the first year are Jared N. Husted, W. C. Amos, W. W. Porter, E. S. Chapman, A. Furlong, E. St. John and Clarence M. La Shelle.

Clear Creek County.

(From Our Special Correspondent.)

Chesapeake Mining and Tunneling Company.—The Philadelphia parties back of this Yankee Hill undertaking have put in air compressors and let a contract for driving the tunnel 800 ft. It is now in 270 ft. A group of gold-bearing veins pass through the mountain, which is not far from the Continental divide.

Corncracker Mining Company.—A premature explosion at this mine on March 5th blew two miners to pieces. The shaft is down 530 ft., and the men had just put in 20 holes that took 100 lbs. of dynamite for beginning a level, when 100 tons of the rock were blasted in a space of 5 by 9 ft.

Little Pittsburg Company.—The Boston people who are operating in this county at Empire and Idaho Springs are figuring on a mill to treat the ores from the Atlantic mine at Empire. It will be another monument to those who prefer building mills before they have mines that can produce ores. They have let contracts on the Brighton mine at Idaho Springs for drifting and sinking. A big body of lead ore shows in this property.

St. Joseph Mining Company.—At this property on Seaton Mountain a shaft is to be sunk and a big boiler and hoist has been ordered. The contract for sinking will be 400 ft.

Wilcox Tunnel.—A good strike of gold-bearing mineral has been cut by this Idaho Springs tunnel. Some silver lodes have also been found, but the great mineral belt lies some 1,000 ft. ahead of the present breast of this bore.

El Paso County—Cripple Creek.

(From Our Special Correspondent.)

Gold Hill Tunnel.—Work on the 400 ft. contact has begun, when completed the tunnel will be 3,100 ft. long and, it is said, will cut the Anchoria-Leland shaft.

Independence Town and Mining Company.—At the annual meeting of the stockholders of this company W. S. Montgomery was elected president, W. K. Gillet vice-president and W. A. Otis secretary. The company owns the Hull City placer on the south slope of Bull Hill. The placer is leased out in blocks.

Red Spruce.—A double friction Hendrie & Bolthoff hoist is being put up on this property by the owners. The shaft is now down 160 ft.

Strong Gold Mining Company.—This mine on Battle Mountain keeps up its output of good ore. It is one of the largest shippers in the district and is owned by a close corporation.

Virginia M. Consolidated Mining Company.—The Lincoln claim has been leased to E. M. De La Vergne of the Raven Company. A little ore is being got out by lessees.

Work.—Very little work is being done by the company and it may shut down altogether except some drifting to be done by contract. A number of leases are being worked and a little ore shipped.

Gilpin County.

Cook.—The hoist for this mine at Black Hawk, bought through Hendrie & Bolthoff, has been shipped by the makers at Akron, O.

(From Our Special Correspondent.)

Ore Shipments.—For February, the ore shipments from this county were 297 cars, aggregating 4,752 tons, the smelting ore and tailings product. In comparison with 1896, last month showed an increase of 10 cars or 160 tons, which would have been much larger if the Tramway Company had been able to handle its regular tonnage.

Central District.—The new camp of Gilpin is showing signs of activity, and many outsiders are becoming interested. At the Victoria the vein has been opened up for over 20 ft. in width. The mill will be remodeled. Two Wilfley tables are put in. The new plant of machinery is up on the Golden Fleece property owned by Prof. E. C. Lindemann.

C. P. W.—This property has been sold to Messrs. Leslie and Gunnell of Buffalo, N. Y., for, it is said, $10,000. The shaft is only 118 ft. deep. The new owners, it is said, intend to put up a medium plant soon.

Eagle Mill.—Two Davis automatic feeders have been put in recently, which give perfect satisfaction, reports the management, and the same make will be put in the New York mill.

May Queen.—Local parties have taken a lease and bond on this Winnebago Hill property, and begun shipments. The mill ore runs about 3 oz. gold per cord, and the smelting ore gives satisfactory values.

Perigo.—A force of 40 men is working steadily, and connections are being made with the upper tunnel to give ventilation, the tunnel now being in over 4,000 ft. The new 30 rapid drop stamp mill, after running nearly three months, has proven itself far superior to the old slow drop mill and the company is getting better values. In February about 98½ tons were treated daily, but so far this month the mill is treating 115 tons per day, with good results.

Phoenix District.—This district lies on the northern boundary of Gilpin County, touching on Boulder County, and the present boom of Eldora is bringing lots of people into the Gilpin County section. Some sales of claims have been made, and considerable work is going on.

Rivals.—This group in the Gregory mining district has been conveyed by Pershing and Reppert of Chicago to the Rivals Gold Mining Company for $7,000 and other considerations, presumably stock. Work will probably begin soon.

Vermilion District.—The Surprise in this district is shipping considerable fair mill and smelting ore. A nice body of ore has been opened in the Golden Sheaf, carrying values of $50 per ton, and the Mann will soon begin shipping. Other properties will start up soon.

Lake County.

(From Our Special Correspondent.)

Pumping Association.—As predicted last week, the members of the association are attempting to get together again and have some one assume the leases on the Bon Air and Penrose. Several meetings have been held in Denver, and committees appointed to examine conditions and report at another meeting March 19th. From what I learn, there are strong efforts made to get back the Smith-Moffat people, or have the pumping association assume the leases given up by them.

Dollie B.—New ore bins are being put up and arrangements made to increase shipments. The great ore shoot is said to be opening out even better than was anticipated, and the importance of the new strike cannot be overestimated.

Hill Top.—The new ore shoot from which shipments of 100 tons per day are now being made is growing richer and larger. This stuff runs 175 ozs. silver, ½ to 1 oz. gold, and about 25 to 35 per cent. lead to the ton. It is said that shipments are to be increased to 150 tons per day.

Holland Mining Company.—This company is to do some work on the Black Bird claim, where a few weeks ago an excellent contact was caught at 90 ft.

Penn Mining Company.—In the Philadelphia on the north end of the Breece Iron, Mr. S. J. Sullivan, superintendent of the Ibex properties, is opening up on the Nettie Morgan ore shoot a fine silicious ore body from which he is shipping 20 to 25 tons per day. The operations are conducted under the name of the Penn Mining Company, of which Mr. Sullivan is the head and the principal owner.

Rex.—A contract has been closed for a diamond drill man to begin work March 15th. After the shaft was down 330 ft., several years ago, a rush of water drove the workmen out. Owing to a squabble over certain territory the parties at the head of the proposition closed down and nothing has been done since. The water is now but 130 ft. from the surface.

Pitkin County.

Colorado Crystal, Marble and Granite Company.—This company, recently organized, proposes to develop the marble beds of Corundum Gulch. C. B. Seldomridge is president, and W. H. Cramp, superintendent and general manager. A $20,000 plant of machinery is said to be on its way to the proposed quarry, some 8 miles south of Aspen.

San Miguel County.

(From Our Special Correspondent.)

Contention Group.—This group, near Telluride, owned by E. A. Hockley & Company, is again pending sale. It was recently examined by P. B. Bradley, A. S. Wright and A. L. Dickerman, of Denver. The principal lead carries a pay streak 1 to 5 ft. wide, which runs from $12 to $35 per ton in gold. Development is being pushed.

Gold King Consolidated Mining Company.—For the first winter in several years 30 stamps of this company's 40-stamp mill are dropping steadily. The ore is reported to run from $8 to $20 per ton. The vein is 5 to 10 ft wide and is strictly free milling. The mine is worked exclusively by leasees.

Gold Pan, Cleveland, Toledo and Weaver.—These claims, about one mile above the famous Nellie mine, were recently leased and bonded by E. L. Sleeper, of Telluride, for a New York company for $35,000. The ore is gold and silver, the last mill run from the Cleveland yielding $23 per ton in gold on the plates. Much work is to be done on the claims this summer.

Tom Boy Gold Mines Company.—The mill, with a capacity of 150 to 200 tons daily, is about to start. This would indicate the existence of large areas of ore 450 ft. below the upper workings. Development work has been pushed since the mill and upper workings closed last October.

United States & British Columbia Mining Company.—This company, at the Alleghany 20-stamp mill, is testing large lots of ore from various properties, among them being the Liberty Bell, Gold & Silver Chief, Lucky Girl and Greenback in Cornet basin, and the Alleghany group. If the ore yields satisfactory results the company intends, says J. M. Dikeman, of Telluride, resident manager, to put up a large mill near the mouth of Cornet creek, and connect it with the Liberty Bell by a tramway 11,000 ft. long.

FLORIDA.

Phosphate Industry.—The Alachna county mines show more activity this season than for several years past. In the Fort White region shipments have been large in February, and at present Mr. J. W. Chiles is operating a new mine and is getting out considerable rock.

Twenty thousand acres of phosphate lands lying in Levy, Lafayette, Suwanee and Citrus counties, belonging to the Blue River Phosphate Company, were sold at public auction at Bronson, Fla., on February 9th. Mr. C. W. White of Citrus was the successful bidder, securing the property for $60,000. These lands are said to be the richest in the State.

GEORGIA.

Lumpkin County.

Birch Dredge.—This dredge-boat is now at work on the Chestatee River at Briar Patch near Dahlonega, and is reported to be doing well.

Burlow.—The mill on this property near Dahlonega has been started up, a quantity of ore having accumulated on the dump. Mr. Joseph Bell is superintendent.

IDAHO.

Owyhee County.

De Lamar Mining Company.—The monthly report of D. B. Huntley, manager, states that during January the usual amount of development and exploration work was carried on with encouraging results. The total amount of ore milled was 3,697 tons, with an average assay value of $11.95 gold and $1.35 silver. The average assay of the tailings was $4.22, the percentage saved, by bullion recovered, was 73.09 per cent. in the pan-amalgamation mill and 65.58 per cent. by the Pelatan-Clerici process. The increased percentage in the pan mill is due to the clean-up of several amalgamating pans. The decrease in the Pelatan-Clerici recovery is apparently due to the deposition of hard amalgam on the copper plates. Ten bars were produced containing 1,522 oz. gold, 8,434 oz. silver. The total value of output in bars, shipping ore, and bullion surplus was $37,979, and the total expense $35,852, leaving an estimated profit of $2,127.

KENTUCKY.

Denver & Cripple Mining Company.—This Denver company has secured control of 48,000 acres of Kentucky coal land belonging to E. B. Carr of Philadelphia. The price is said to have been $340,000. The property is to be developed at once.

MARYLAND.

Allegany County.

Gorman, Jenkins & Co. will open a new coal vein near Westernport.

MICHIGAN.

Copper.

Allouez Mining Company.—At the annual meeting in New York, March 8th, the following directors were chosen: Godfrey Morse, of Boston; William C. Stuart, Joseph E. Gay, Leonard Lewisohn, John Stanton, of Newark; J. R. Stanton, George Frothingham, Jesse Lewisohn and Fred Smith, of Michigan.

Atlantic Mining Company.—At the annual meeting in New York, March 8th, the following directors were elected: Joseph E. Gay, John Stanton, of New York; J. R. Stanton, J. W. Hardley, Isaac B. Crane, William C. Stuart and Samuel L. Smith of Michigan.

MISSOURI.

Jasper County.

(From Our Special Correspondent.)

Joplin Ore Market. — Another favorable week for mining has passed, and the sales of ore were enormous. Zinc ore sold at the same price as last week, $22 per ton, but lead ore advanced 50c. per 1,000 lbs. near the close of the week, and the heavy sales were made at the higher price. There is very little surplus ore in the district, showing that the consumption and exports of zinc have increased greatly of late. Four years ago, with a very much smaller output, ore would accumulate until the market was dead and prices would drop, but at present there is a demand for every pound of ore produced.

As compared with the preceding week the production was greater by 821,600 lbs. of zinc ore, and 173,970 lbs. of lead ore, and the value was greater by $14,850. For the corresponding week last year zinc ore sold for $21.50 per ton and lead ore for $18 per 1,000 lbs., but the sales were less than for the past week by 4,068,090 lbs. of zinc ore and 332,090 lbs. of lead ore, and the value was less by $60,197. Following are the sales of lead and zinc ores from the different camps in the district for the week ending March 5th, 1898: Joplin, zinc, 1,719,090 lbs.; lead, 409,640 lbs.; value, $27,677. Carterville, zinc, 1,182,320 lbs.; lead, 255,490 lbs.; value, $17,929. Webb City, zinc, 617,080 lbs.; lead, 32,080 lbs.; value, $6,922. Oronogo, zinc, 568,470 lbs.; lead, 26,120 lbs.; value, $7,079. Duenweg, zinc, 753,260 lbs.; lead, 84,440 lbs.; value, $10,517. Central City, zinc, 281,710 lbs.; lead, 28,460 lbs.; value, $3,686. Galena, zinc, 3,150,000 lbs.; lead, 480,170 lbs.; value, $43,570. Aurora, zinc, 720,000 lbs.; lead, 25,000 lbs.; value, $6,393. Stolt City, zinc, 349,990 lbs.; value, $3,849. Springfield, zinc, 88,000 lbs.; value, $968. Carthage, zinc, 86,830 lbs.; value, $912. Belleville, zinc, 74,490 lbs.; lead, 2,510 lbs.; value, $841. Total of the district for last week, zinc, 9,691,240 lbs.; lead, 1,343,890 lbs.; value, $130,343. District totals for 9 weeks, zinc, 74,695,610 lbs.; lead, 10,929,793 lbs.; value, $1,002,379. Of the $130,343 worth of ore sold last week Jasper county produced over $85,560 worth, nearly two-thirds the production of the entire district.

I Know Mining Company.—This famous Leadville Hollow mine on the Joplin Prospecting Company's lease on the John H. Taylor land changed hands February 3d. The price was $30,000. The purchasers were a Philadelphia, Pa., syndicate. They have 8 lots on which there is a fine steam concentrating plant. The I Know has a record of paying more and bigger dividends in the same space of time than any other mine in the district. The dividends have averaged over 25% a month, and it has paid three 25% dividends this year.

June Mining Company.—This mine on the Rex Mining Company's land, another big producer, was sold last week for $30,000. The strike in the shaft was made in June, 1897, and since then this mine has produced weekly from 35,000 to 70,000 lbs. of lead ore. There are 20 acres in the lease, and a large steam concentrating plant goes with it.

MONTANA.

Flathead County.

(From Our Special Correspondent.)

B. & B.—The Downey Bros. have sold this property to a Spokane company, which will build a mill to dress the low-grade ore.

Gold Flint.—This property, in the Kootenai River mountains, has just sent to the United States assay office at Helena its first gold retort from the new mill, some 320 oz. of .900 fine, representing the first month's run.

Snow Shoe.—This property, near Libby in the Kootenai, is under negotiation by an English company on a basis of $200,000. The Milwaukee owners last year built a concentrator. Both mine and mill for some time have been operated by lessees.

Gallatin County.

(From Our Special Correspondent.)

Gallatin Railroad Company.—The incorporators are W. W. D. Turner of Spokane, W. A. Ritchie of Spokane and Frank Hall of Milwaukee. Principal office will be at Bozeman. The road will start at Three Forks and run along the Gallatin River to Dodge Creek, about 9 miles. It will open up the coal deposits on Dodge owned by the incorporators and John Luce of Bozeman, who is the chief promoter of the enterprise.

Granite County.

Golden Sceptre Mining Company.—J. R. McDonald of Philadelphia, president and manager of the company, who has been in Montana several weeks, states that the company hopes to have its entire plant at Quigley running by early summer.

Jefferson County.

New Elkhorn Mining Company.—The January report of Manager W. S. Kelley states that the average amount of development and exploration work went on. The ore mined came to 1,635 cars, or 939 tons. The mill treated 1,064 tons, of an average assay value of 42.58 oz. The tailings assayed 5.48 oz., giving a recovery of 89.5 per cent. Twenty-eight bars were produced, yielding 38,771 oz. silver and 27 oz. gold. The net value of the bullion with the December surplus was $21,956; the total receipts $27,119; expenses, $25,702, leaving a profit of $1,418.

(From Our Special Correspondent.)

Big Tizer Placer Mining Company.—The company has elected T. J. Chestnut president, V. E. Witham vice-president, A. E. Long secretary and treasurer. Last season the company was organized on a basis of 200,000 shares at $10 each. Several blocks of stock have changed hands at 25c. per share.

High Ore.—The 1,500-ft. tunnel is completed. Several ore bodies were cut, and the last 15 ft. of tunnel was in ore without reaching the wall. The management will continue for 200 ft. more. A concentrator will be built.

Little Alma.—A. K. Prescott, who owns the Free Coinage, has taken a bond on this mine and will sink a shaft on the line between the two properties.

Lewis & Clarke County.

(From Our Special Correspondent.)

Empire.—I learn that the 60-stamp mill of this company will be running again by April 1st, Wm. Word having returned from the East to start it.

Iron Mountain Company. — The company has bought the War Eagle property at Butler, about 12 miles from Helena and is developing it. Machinery to equip it is being brought from the company's property in Missoula County.

Montana, Limited.—The new cyanide mill, of 400 tons capacity, to work the old tailings, will start on March 15th. Exploration work in the Drum Lummon the past winter has opened up a large reserve sufficient to keep the 60-stamp mill supplied for a year.

Meagher County.

(From Our Special Correspondent.)

Bourbon.—This property, on Brick Creek, 8 miles from White Sulphur Springs, is about to be sold to Chicago parties for $25,000. Before the drop in silver it was a regular producer at a fair profit, notwithstanding a wagon haul of 60 miles to the railroad.

Broadwater.—This Neihart property, owned by John E. Searles of New York, is worked by tributers. This system was adopted when J. E. Hendey gave up the management.

Queen of the Hills.—Continued exploration is proving the recent strike to be the biggest so far ever opened up in Northern Montana.

Silver Bow County.

(From Our Special Correspondent.)

Boston & Montana.—At the West Colusa, a station is just finished at the 300-ft. level, and a crosscut in 300 ft. south has struck the ledge. The usual amount of ore is being extracted. The shaft is being sunk to the 800. All of the Colusa properties are in good working order, and the stopes and most of the drifts still are good producers. Quite a number of Mountain View miners are now developing the Johnstown lead in small shafts along the line of the disputed territory. The shortage of ore necessitated by the removal of the men is from the various Colusa properties at Meadesville. Mining men in Butte and throughout Montana generally are closely watching the contest in the United States Court between E. Rollins Morse, representative of the Butte & Boston and the Boston & Montana companies, against the Montana Ore Purchasing Company. The suit will decide the ownership of one of the richest ore-bearing veins in the camp. It is expected the case will last many weeks.

Montana Ore Purchasing Company.—The Glengarry is worked at present almost entirely on lease. Some very good ore has been extracted in the past, but now only the best parts of the lead are worked.

NEVADA.

Elko County.

(From Our Special Correspondent.)

Dexter.—Owned chiefly by a Salt Lake, Utah, company. Management recently installed a 40-stamp mill, with tables, in addition to cyanide plant, which will treat tailings in future. An expensive electrical plant was installed on a creek 12 miles from Tuscarora, where mines are situated, by an engineer who measured 750 cu. ft. under 168 ft. head. Subsequently stream was measured by another party, who found it to be but 400 cu. ft., which would have been ample for 90 H. P.., but when transmitted across the valley a delivery of 28 H. P. only was accomplished. This allows of the running of only 20 stanps, 5" drop and 68 drops to the minute, where full capacity of plant, with 110 drops, was anticipated. Management makes claim that with an additional installation on an adjacent creek difficulties on shortage of power will be overcome, but experts who have measured this stream say that under a possible 220 ft. head there are but 170 cu. ft., and it is a matter of record that with direct application of water power this stream some years ago was inadequate to the calls of a 10-stamp mill. Officers of company are: W. H. Dickson, president; A. C. Ellis, vice-president; Hiram E. Booth, secretary-treasurer, all of Salt Lake, Utah. Mine is a first-class proposition, but, failing to get power for the plant erected, earnings are not being realized and an assessment of 15c. per share, or $30,000, has been levied, payable at once and delinquent April 4th. This, management states, will discharge floating indebtedness; but a mortgage on property expiring July 1st, 1898, calls for $100,000. Management states that mill earnings will wipe this out in time, but this feeling is not shared by practical men thoroughly acquainted with the conditions. James W. Linnell, former president and manager, is still the heaviest individual shareholder. The other chief shareholders and officers and directors are members of the legal firms of Dickson, Ellis & Ellis and Booth, Lee & Gray of Salt Lake, and management of property has been in the hands of these gentlemen.

Lincoln County.

(From Our Special Correspondent.)

Eagle Valley Mines.—All machinery for a 10-stamp mill to be erected on the group recently purchased by Dr. W. J. Nelson of Boston is now at Milford, Utah, en route. Country is well timbered, and part of the equipment is a sawmill. Machinery is furnished by Colorado Iron Works Company.

Storey County—Comstock Lode.

Sierra Nevada.—The last superintendent's report states that work in the face of the Riley tunnel was resumed and it has been advanced during the week 12 ft.; total length, 752 ft,; face in low grade quartz. The raise started from the tunnel 700 ft. in from the mouth is up 16 ft.; roof in ore. Have taken out from said raise 14 mining cars of ore, the average assays from samples taken from the cars was, gold $20, and 16 oz. of fine silver per ton. Have come back to the sill floor to take up an additional set with the raise. The east crosscut started 10 ft. south of the winze has been advanced 8 ft.; total length, 49 ft.; face in porphyry; discontinued.

The " Virginia Chronicle" says of that part of the mine being explored through the Riley tunnel: "It is said that there are several hundred tons of ore in sight; high assays have been taken from the ore; and the company is preparing to take the ore out and mill it. The ore house at the mouth of the Layton tunnel, recently erected, is being moved lower down the hill at the Sierra Nevada workings. The Riley tunnel is below the Layton tunnel, and the change is being made so that ore from the ore body in the former tunnel may be placed in the ore house. Work in the second compartment of the upraise in the new ore body will be prosecuted as soon as the ore house is ready to receive the ore. The ledge is said to be 14 ft. wide."

NEW MEXICO.

Ortiz Land Grant.—According to articles that have gone the round of the Western press, a company has been formed to control this grant, Thomas A. Edison is to erect a mill for treating certain low grade ores by a new process. Presumably this process is the magnetic separation of certain black sands that carry some gold. As yet little is known about the scheme and the New York parties interested will give no particulars. In a recent interview Mr. Edison is reported to have said that he would receive $1,500,000 if his process, by which "gold can be obtained from a mine without the use of water," proves a success. If it did not prove a success he would be paid for his services anyway.

NEW YORK.

Schoharie County.

Howe's Cave Association.—This company, with a stock of $200,000, has been formed to work the clay and limestone deposits near Howe's Cave and manufacture Portland cement. The company has bought all the stock of the Howe's Cave Lime and Cement Company, and controls 400 acres of land. The officers are: T. Henry Dumary, president; Charles E. Lee, vice-president and general manager; Charles H. Ramsey of Howe's Cave, secretary and treasurer; Sheldon Norton, superintendent.

Warren County.

Stony Creek Mining Company.—This company has been incorporated, with office at Stony Creek. The directors are James D. Darling, M. L. Messenger, J. E. Burdick, F. E. White, James Gillespie, L. R. Dunlap, L. L. Hall, Alvin Winslow and E. P. Bellows.

NORTH CAROLINA.

Cherokee County.

Irwindale Mining Company.—Incorporation papers have been filed by this company, of Murphy, with a capital stock of $36,000 and power to increase to $1,000,000, for the purpose of developing mines of all kinds in this county. The incorporators are M. Ramsey, A. P. Stuart, H. C. Gibbs, E. Piarrins, Ruleman Miller and E. S. Jaques, of New York City.

PENNSYLVANIA.

Anthracite Coal.

Number 2 shaft at Alden that has been on fire for several weeks, is now nearly flooded. It may take some time to quench the fire. Two large pumps are ready to tail the water from the shaft when the flooding is done.

Luke Fidler mine at Shamokin resumed work recently after three years of idleness. About 500 boys and men were given employment. The red ash vein will be worked.

Berks County.

Bittenbender.—These iron mines near Siesholtz-

ville are now running with a double shift. H. H. Godshall is working the property, and shipments are 200 tons a day.

SOUTH DAKOTA.

Pennington County.

(From Our Special Correspondent.)

Placer Mining.—There will be much placer mining in the Hills this season. Four companies are preparing to work on Castle Creek. Shinn & Bell of Corning, Ia., began sinking in January near Mystic, but have closed down because not able to handle the water. Larger machinery will be put in. Weber & McBride of Kansas City began a shaft last fall with a 50 H. P. boiler and engine, a 10 H. P. gasoline hoisting engine and an 8-in. centrifugal pump. They were able to handle the water and sunk to bedrock. Last week Burnhard & Weishart of Corning, Ia., delivered on their ground on the lower end of the Fargo claim a set of machinery of 50 H. P. A similar outfit was also delivered on the ground of Thompson & Hymer. This placer district is within the forestry reserve and it is a question what the outcome will be.

Lawrence County.

(From Our Special Correspondent.)

Hercules Gold Mining Company.—The annual meeting of the company was held in Chicago recently. The new directors are: John Walker, George E. Gooch, William B. Jackson, John Crerar, Willis Counselman, H. D. Sturtevant and William R. Collins, Chicago; Sam C. Rickson, James G. Heggie, Joliet, Ill.; W. H. Steen, Fred S. Harris, Deadwood. The officers elected are: President and manager, John Walker; vice-president, George E. Gooch; secretary, William B. Jackson; treasurer, William R. Collins.

North Star Group.—The shaft has been started in old workings. It will be sunk to the 200-ft. level.

Portland Mining Company.—All of the property of this company, organized in 1878, has been sold to satisfy foreclosure, and was bid in by a trustee of the stockholders. A consolidation of the Portland and Clinton mining companies is expected. In the Portland it is said a 360-ft. shaft will be sunk. This is the pioneer company of the Bald Mountain district.

Ruby Basin District.—This district is considered one of the most promising in the Hills. The mineral land for several miles south of the Mogul Union and Tornado has been taken up or purchased by large companies. Pits are being sunk in the southern part in an entirely new district.

Two Bit District.—The Smith group has been sold to Samuel Brady, Malcolm McCullam, Frank Andrews, A. J. Murphey, Robert Murphey, F. D. Andrews and John F. Beebe, all of Chicago. It consists of 12 claims.

Union Hill Mining Company.—Several of the directors of this company have been on from New York and Pennsylvania to inspect the property. It is announced that work will be resumed at the mines and on the smelter within a month, and all of the indebtedness of the company will be paid.

TENNESSEE.

Campbell County.

Buckeye Coke Company.—On application of J. W. Borches, George L. Washburn has been appointed temporary receiver of this company, whose mines are situated near Newcomb, in Jellico district. Liabilities said to be $45,000, with $15,000 assets.

TEXAS.

Llano County.

Gold Discoveries.—According to press dispatches, T. B. Rellett, a mining expert of Arizona, states that he spent two weeks in the Llano district, making careful investigation of the alleged rich finds of gold; that the excitement over the district is entirely unwarranted by the existing facts, and that land boomers are responsible for many of the wonderful stories told. He admits that gold has been found, but claims that it is only in small pay streaks and pockets, and that so far there is not a prospect in the entire district that is worth working.

Navarro County.

The Co-Operation Oil Company, capital $20,000, has applied for a charter to do business in Corsicana, Tex. Rufus and G. W. Hardy and J. L. Habberly are incorporators.

Corsicana Oil Field.—An oil refinery will be erected by Theodore H. Ellis of Ilion, Pa., at Corsicana.

Palo Pinto County.

Content Coal Mining Company.—With a capital of $600,000, this company was recently organized at Strawn to operate a colliery. J. M. Presler of Comanche is president; J. L. Stephenson of Abilene, secretary; W. R. Lindsay of Comanche, treasurer, and W. W. Johnson of Strawn, general manager.

Tyler County.

Ocher beds have recently been discovered by M. Votaw at Colmesneil, and a plant for drying and pulverizing the mineral is to be erected.

UTAH.

(From Our Special Correspondent.)

International Mining Congress.—Mr. W. D. Johnson, chairman of the Executive Committee, is agreeably surprised at the developing interest among local mining and business men over the Congress to be held in Salt Lake July 6th, 7th, 8th. The selections on the various committees have so far proved excellent, and the mining stock brokers have partially organized to lend their aid. At this stage the Congress promises to be nearly as important as the Semi-Centennial Jubilee of 1897, and its scope, being material rather than sentimental, the results should be of incalculable benefit to the development of the interests of the State.

Box Elder County.

(From Our Special Correspondent.)

Century Mines.—Situated in Clear Creek Range near Idaho line. Comprise nine claims under survey for patent, in several of which a fine quartz ledge carrying good gold values is exposed. Company has erected a Crawford mill with a daily capacity of 10 tons, making a saving of about $12 per ton of gold .954 fine. Some very rich ore is encountered at times, and when present mill structure was built it was provided with a capacity for 20 stamps, which are soon to be erected. Dr. John T. White of Salt Lake is president and manager.

Juab County.

(From Our Special Correspondent.)

Niagara. — Management has commenced the blocking out of ores in the gold vein in anticipation of starting the cyanide plant for the season (the third season) about the middle of May. From the sulphide belt a heavy extraction of high grade lead ore continues.

Tintic Shipments.—Forwarded in week of March 5th: Bullion-Beck, 25 cars ore; Gemini, 16 cars ore; Centennial Eureka, 4 cars ore; Eureka Hill, 10 cars concentrates, 4 cars ore; Mammoth, 18 cars ore, 7 cars concentrates; Sioux Mill, 1 car bullion, 2 cars concentrates; Utah, 1 car ore; North Star, 2 cars ore; Grand Central, 2 cars ore; South Swansea, 4 cars ore; Swansea, 4 cars ore; Lower Mammoth, 2 cars ore; Dragon Iron Mine, 21 cars ore; Uncle Sam and Humbug, 10 cars ore. Total, 113 cars ore, 19 cars concentrates, 1 bar bullion; probably the heaviest week's business in the history of Tintic District.

Salt Lake County.

(From Our Special Correspondent.)

Bingham Shipments.—Total for February, 536 tons, an increase of 2,031 tons over January. Principal shippers were Old Jordan & Galena, 1,738 tons; Highland Boy, 943; Niagara, 836; Old Telegraph, 550; Dalton & Lark, 250; Eighteen-Eighty-Nine, 231; Landmark, 126; Fortune, 150; Giant Chief, 160; Storey, 140. Remainder is made up by small shippers with less than 100 tons each.

Germania Smelter.—Management is putting in 5 additional Bruckner roasters of a daily capacity of 12 tons each. Roasters 26 ft. 6 in. by 8 ft., and were furnished by the Colorado Iron Works Company, together with contingent machinery. A new structure to contain the roasters is being erected by the Gillette-Herzog Manufacturing Company, to occupy a space 45 ft. by 120 ft., and will be entirely of steel, with corrugated steel roof and sides. The truss and girder work is unusually heavy, to carry trams, shafting, etc., to operate the roaster, which weigh 32,000 lbs. each. This gives smelter a total of fifteen Bruckner roasters. Ore receipts at the smelter are heavier than for many months, and the entire five stacks of the plant are operating full blast.

Winnamuck.—A new Hooker pump, with a capacity of 300 gals. per minute, has been ordered for 400 level. Owners are exploring a new fissure in upper workings and one on 300 level.

Summit County.

(From Our Special Correspondent.)

Daly-West.—Annual meeting held in Salt Lake February 28th. John J. Daly, president; O. J. Salisbury, vice-president; Dr. Allen G. Fowler, secretary-treasurer; Ezra Thompson, W. S. McCormick, additional directors. Company is unique in that only half of entire interests are incorporated, remainder being held by Haggin, Tevis and the Hearst estate. Mr. Daly had just returned from New York on a mission to effect a complete union, or a purchase of outstanding interests, which he reported futile. A resolution was accordingly passed authorizing the resumption of work at both the mine and mill in the near future. Crude ores of mine average 25% lead, 55 oz. silver, $1.50 gold and copper of the value of $2.50. Annual report showed that in 1897 ores of the value of $53,000 had been sold, the greater portion of which had been mined in 1896. To date operations have not been resumed, but are likely to be about April 1st.

Tooele County.

(From Our Special Correspondent.)

Chloride Point.—Company's new cyanide plant is thoroughly completed and ready for service as soon as electric current is delivered. Pole line for this from Golden Gate mill has been delayed on account of non-arrival of material, but this is now overcome, and plant is to be treating 200 tons per day by March 15th. A bucket tramway 400 ft. long connects mine and mill, and this is also ready for service. Latest shipment, received in Salt Lake March 4th, carries 116 oz. silver.

Golden Gate.—On March 3d management began hoisting ore for delivery to the great mill and treatment began the same day. Maximum capacity could not be expected from the start, and it is likely that the end of March will approach before a heavy tonnage will be put through. Manager H. A. Cohen advised your correspondent that his intention now was to reach a total capacity of 1,000 tons per day early in the present season. The electric current for all motors, generated in Provo Canyon and transmitted 37 miles, has proven ample for all requirements, and machinery is working in first class order.

Hercules.—As evidence of the worth of Lion Hill in the Mercur region, the Hercules comes forward this week with a strike of 7 ft. or more of a good milling ore. Company has spent $7,800 in exploring the ground which is near to and adjoining Chloride Point. Strike was in a winze 90 ft. deep, and but 100 ft. from lines of Chloride Point, and in the mass are found two streaks of high grade silver-gold ore of the same character that Chloride Point is now shipping.

Lower Mammoth.—This, one of the newest among Tintic producers, came forward this week with two cars of high-grade silver-gold ore.

Overland.—Since his return from the East Mr. Gill. S. Peyton has commenced work on double-compartment working shaft, collar of which was located with reference to future mill. Shaft will be 400 ft. deep. Authorities who have recently examined property pronounce the vein the best defined yet exposed in Mercur region. Ore maintains average width of 12 ft. for 350 ft. on strike and 300 ft. deep. Winzes are being sunk connecting various levels and ore is thus being blocked out while vein is being explored.

Pacific.—At 60 ft. in shaft an 8-ft. vein has been cut containing a small streak of 40 per cent. lead ore, carrying 139 oz. silver and $14 gold. A copper-bearing ledge is expected to be cut with a few feet more depth.

Treasure Hill.—The pay streaks in the 50-ft. vein recently cut on the 350 level has widened to over 3 ft., and an excellent grade of oxidized iron, carrying 30 per cent. 14 oz. silver and a little copper, is being stoped for shipment. The excess iron makes ore an ideal flux, and contract is about to be closed with smelters for output.

Undine.—Under contract drifting has been commenced on 250 level, objective point being Jo Daly vein, which in its upper workings was productive of much high-grade ore. A flow of pure water has been encountered in the mine, and the management is arranging to pipe this to supply the town of Silver City.

VIRGINIA.

Louisa County.

A soapstone plant will be established on the land of B. H. Hester, near Oakland.

WASHINGTON.

Stevens County.

Canada Mutual Mining and Development Company.—This company, composed of Canadians, owns the Gladstone group, near Boundary. The ore is said to carry 60 to 80 per cent. lead. A first shipment of a carload has been made to the Tacoma smelter.

WEST VIRGINIA.

Loudoun County.

Extensive ocher beds in this county have recently been secured by Talmadge & Wilson of Washington, D. C., and Baltimore, Md.

Mingo County.

Maritime Coal Company.—The mines have resumed work, after being idle a long time. Every mine on the Norfolk & Western Railroad, between Kenova and Bluefield is now in operation.

Petroleum.

Elk Fork Pool.—The pool has not furnished a new well for some little time, and the production is settling quite rapidly. The runs from the pool in February were close to 160,000 bbls., or an average of 5,715 bbls. a day, as against 7,423 bbls., the average in January. By the end of March the work now underway will have

been completed, and there is very little new work starting.

Tucker County.

Dan's River Coal and Coke Company.—This company has bought 2,500 acres of coal land near Dobbin from the J. L. Rumbarger Lumber Company.

WYOMING.

Laramie County.

(From Our Special Correspondent.)

Fibrous Talc.—John I. Hightower, of Wheatland, this county, discovered a very large vein of foliated talc. Its location is in the mountains north and west of Wheatland, and too far from the present line of the railroad to make it available at present. The vein is very extensive; a shaft only 10 ft. deep proved the mineral to be free from iron and impurities, and equal to the average commercial product.

FOREIGN MINING NEWS.

ASIA.

Siberia.

(From Our Special Correspondent.)

A decree recently published announces that prospecting for gold, silver, other metals of all kinds and minerals will be permitted hereafter in the Primorskaia Oblast, which is the province of Eastern Siberia extending from the Pacific Coast to the Amour and Oussouri rivers. Prospecting licenses will be issued to applicants without regard to their nationality, and foreigners will stand in the same position as Russians. In this respect, the only restriction is that no foreigner or foreign company will be permitted to become a partner in existing Russian companies. This will not prevent the granting of licenses or other privileges to companies composed wholly of foreigners. No prospecting will be allowed on the territories reserved for the Imperial domain; but these lands constitute only a very small portion of the whole region. Eastern Siberia is at present very thinly inhabited and imperfectly explored, but it is believed to be rich in minerals of different descriptions.

AUSTRALASIA.

Tasmania.

Mount Lyell Mining Company.—The report for the four weeks ending February 9th shows a total of 8,873 tons ore worked. The result was 366 tons matte, the contents of which were 361 tons copper, 37,217 oz. silver, and 1,740 oz. gold. The average result was therefore 4.1 per cent. copper, 4.2 oz. silver, and 0.19 oz. gold per ton worked.

CANADA.

British Columbia.

The Dominion Government has been advised that the British survey ship "Egeria," now at Esquimault, will in April begin a survey of the west coast of Vancouver Island and the British Columbia coast as far north as Wrangell. This work is to be done by order of the British Admiralty, in view of the increased traffic along the coast and the present imperfect surveys.

Hall Mines, Limited.—This company's statement of smelting operations for the four weeks ending February 26th is as follows: Time, 22 days 15 hours; ore smelted, 5,436 tons. The yield was 321 tons matte, containing approximately 125 tons copper, 77,020 oz. silver and 402 oz. gold. The average result was therefore 2.3 per cent. copper, 14.2 oz. silver and 0.07 oz. gold per ton.

British Columbia—West Kootenay District.

(From Our Special Correspondent.)

Ore Shipments.—The ore shipments of the West Kooetnay district for the months of January and February amounted to about 20,000 tons, valued at $2,200,000. The valuation includes matte, the product of local smelters. The shipments for each month come about the same in tonnage.

British Columbia Smelter.—There are various reports about this smelter at Trail that lack verification. Mr. A. P. Heinze has given notice that a special general meeting of the shareholders will be held at Trail on March 25th, to consider a resolution authorizing the disposal of the whole or any portion of the assets and subsidiary interests of the company.

Canadian Pacific Exploration.—The Winze group of seven claims, more generally known as the Big Four, was recently bonded by the C. P. E. for $50,000. It is on the east side of the Kootenay River, opposite the mouth of Slocum River. The Apex group has also been bonded by the Canadian Pacific Exploration for $30,000. The property is on the divide between Clear Water Creek and Wild Horse Creek. The group consists of four claims.

Le Roi.—There are four actions brought by employes pending in the County Court of Kootenay against the company, for damages to life and limb, that aggregate $20,000.

Porto Rico.—This company recently shipped two tons of ore to San Francisco for treatment that gave returns of 80 per cent. of the gold saved on the plates, and 14 per cent. on the concentrates. The management intends shortly to put in a 20-stamp mill at the mine, to treat 75 or 80 tons daily.

Ontario.

Canadian Petroleum Shipments.—During January, 1898, there were shipped 16,218 bbls. of crude and 17,975 bbls. of refined oil, equivalent to 58,577 bbls. of crude. The Grand Trunk and the Michigan Central railways carried this oil.

Yukon District.

The number of persons leaving Montreal for the gold fields continues to be very large. They come from about the city, from the maritime provinces and from the United States. At present there are about 400 a week on their way West. Among some of the larger recent parties were 35 immigrants from Europe, also one of 20 from Magog, Que., headed by A. G. Dollof; three parties from New Brunswick, one of them led by Capt. W. M. Body of Prince William County.

The New York agents of the various transportation companies report a very decided falling off in the number of tickets sold and a great drop in the demand for Klondike literature. In the meantime the rate war between the transcontinental lines over transportation to Puget Sound points continues, and one company has given notice of a second-class rate of $5 from St. Paul.

At Victoria on March 5th over 500 miners' licenses were granted. A few days before the steamer "Aorango" brought into port nearly 200 men from New Zealand and Australia who were bound for the Klondike.

Certain opinions expressed during the discussion of the Alaska homestead bill at Washington, together with the attitude that has been maintained by certain outfitting points and trading companies in the United States, have caused some resentment at Ottawa. A bill has been introduced in the Canadian House providing that none but Canadians shall hold mining claims in the Dominion.

EUROPE.

Germany.

A fire in the Seznowice coal mine, near Breslau, in Silesia, started on March 5th, doing great damage to the mine. Twenty dead bodies had been taken out at the time of the dispatch, and more men are reported shut up in the mine.

MEXICO.

Chihuahua.

San Domingo Mine.—News has been received of a fire in this mine, which is in the Santa Eulalia district, 15 miles southwest of Chihuahua. Two men were killed, and at last accounts the heavy timbers of the main shaft had been burned out, and the shaft had caved in, but to what extent could not be ascertained.

NEWFOUNDLAND.

The Government of the colony has concluded a contract with Mr. Reid, the contractor who built the Transinsular Railroad, securing an extensive development of internal resources. Mr. Reid has been prospecting in the colony for years. He contracts to operate the entire railway system of the colony, 600 miles, for 50 years in return for a land subsidy of 2,500 acres a mile. The Government is to transfer to Mr. Reid the extensive coal areas now reserved to the crown and known from geological reports to be exceedingly valuable.

Mr. Reid will purchase the St. John's dry dock for $350,000; the Government telegraph service for $125,000, and he contracts to construct seven steamers, to ply between the great bays and Labrador. Mr. Reid undertakes to establish pulp and lumber mills, to operate the coal, copper, pyrites and other mines, also the immediate construction of an electric railway line in St. John's and the paving of the main streets of the city. He will pay over to the Government $1,000,000 in cash as a guarantee for faithful performance of the contract. This money, with the interest accumulations for 50 years, will belong to the colony at the expiration of that period, the railroad then reverting to the representatives of Mr. Reid. A failure on his part to perform the contract will mean, the forfeiture of the railway and the guarantee to the colony. The Government will guarantee Mr. Reid a duty of $1 a ton to exclude foreign coal, and $100,000 a year for 30 years as a rail and steamer mail subsidy, with $12,000 a year for seven years as a telegraph subsidy. It will also grant him a charter to land a cable and pay him $200,000 toward the construction of unfinished branch railways and $140,000 toward the expense of paving the city streets.

SOUTH AMERICA.

British Guiana.

The gold production reported for January, on which royalty was paid to the colony, was 5,896 oz. This compares with 5,024 oz. in January, 1896, showing an increase of 872 oz. this year.

COAL TRADE REVIEW.

New York. Mar. 11.

Anthracite.

The anthracite trade of the seaboard States just at present is in a decidedly somnolent condition. This is ordinarily an off season of the year when consumers still have coal on hand and everything depends on temperature, because no one is in a hurry to stock up. As the weather this year has been for some time so very mild and consumption so decidedly below normal, the present state of affairs offers little prospect of any great immediate improvement. Still coal is moving slowly and those roads that did not try to push their production for February to the limit alloted them report less coal on hand at the end of the month than at the beginning. This shows that if the roads maintain their present position as regards output the trade when the spring business comes along should be in a fairly healthy condition. Some coal is going to the East. Stocks on hand at Boston are reported low, but no one expects any great run of orders for delivery there before May 1st. Taxes are assessed then, and dealers do not care to have more coal on hand than will be used in the regular run of orders.

Chestnut coal continues very scarce and some of the roads are refusing orders from the seaboard States, as better prices can be obtained in the West. There is as yet no disposition to cut prices by the large concerns, and the present quotations will probably be used as a basis for the spring trade. Some of the outside producers are quoting 15c. under circular prices and some companies with limited storage facilities are offering further concessions, but these cut prices do not move much coal, because as has been noted, this is not the time of year when stocks are laid in. The quotations by the last circular, that bid fair to last some time, are: Broken, $3.50; egg, $3.75; stove, $4.00; chestnut, $3.75, f. o. b. New York. Pea has sold up to $2.60 and buckwheat to $2.25.

Bituminous.

The seaboard soft coal trade continues to show improvement. The far East is taking more coal, and in the decline of ocean freight rates orders from this territory are expected to increase decidedly. Indeed, people are now making numerous offers to take coal at 5c. off the current rates of freight. Such offers, of course, will continue until freights reach their regular lowest limit in midsummer. Some of the ice ports are now open, and coal is being shipped to them to a considerable extent. Generally there is something of a rush on the opening of navigation at these ports to fill up stocks that have been depleted by the winter's consumption, and such is the case now. Sound trade continues large. It is believed that most consumers have fairly good stocks in hand, the report being that they have filled up on account of the war scare.

New York harbor trade is fairly good, with a continued demand for coal, as consumers seem anxious to get coal as soon as orders are in the hands of shippers. All rail trade is quiet, and tonnages are less. The total amount of coal going forward from mines to tide is large, and in some cases shipments are made to the full capacity of mines. Shipping ports generally give fair dispatch. The delay in loading vessels in some cases is entirely on account of slow transportation from mines to tide, as in some cases cars have been two weeks on the road that should have come through in three or four days. This situation has been greatly relieved, but the condition of railroad service is yet below normal. Car supply is up to all the requirements of producers.

In the coastwise vessel market, the boats are beginning to come out of winter quarters, and freight rates are expected to fall. There are a few vessels in port, but orders for present shipment at present rates are scarce, as producers are waiting for lower figures.

We quote current rates from Philadelphia as follows: Sound ports, 65@70c.; Portland, Salem and Boston, 85c.; Bath and Portsmouth, 85@90c.; Lynn, $1; Newburyport, $1; Dover, $1.25 and towage, with 10c. above these rates for further lower ports.

Notes of the Week.

The Baltimore & Ohio Railroad Company has abolished the offices of Eastern and Western coal agents. Mr. J. A. Murray has been appointed general coal and coke agent, with office in Baltimore. Messrs. W. L. Andrews and E. T. Affleck have been appointed assistant coal and coke agents. Mr. Andrews will have charge of the coal business east of the Ohio River, as covered by the Pittsburg Division and branches; his office will be in Pittsburg. Mr. Affleck will have charge of all coal traffic originating on the lines west of the Ohio River; his office is in Columbus, Ohio.

Coal receipts at San Francisco by water in

February were 117,319 tons; for the two months ending February 28th they were 226,025 tons, a decrease of 6,074 tons, or 26%, from 1897. The receipts in detail were: Eastern, anthracite and Cumberland, 5,903 tons; Oregon and Washington, 87,359; British Columbia, 85,412; Australia, 32,829; Great Britain, 14,522 tons. Receipts from the Mt. Diablo mines in California are not included. The coal traffic has been much interfered with by the demand for vessels for the Alaska trade.

Birmingham, Ala. March 7.

(From Our Special Correspondent.)

There is a good demand for Alabama coal, and all mines are steadily at work. As pig iron prices are stationary, there are no advances to be noted in the coal miners' wages, which are under a contract based on the pig iron quotations. Both the committees, one from the Sloss Iron and Steel Company and the other from the Tennessee Coal, Iron and Railroad Company's miners and mine laborers, have made an investigation into pig iron sales, and have made reports that there will be no change in the mining prices for this district. This regulates the entire State.

There is much domestic coal being sold, while the export trade is picking up. There are many rumors heard around that large coal dealers in the North are figuring on getting a great part of contracts with the Government for fuel filled in this State. It is stated here on very good authority that the miners in Alabama will be given employment steadily through the summer, the first time in some years, on account of the demand that has arisen at the ports in Florida and at Mobile. The coal mined at Pratt City has been tested, and has come up to all Government requirements. The only thing operating against it is the freight charges to the ports. At Pensacola and Mobile large coal docks have been erected for the handling of the product, and no time is lost in getting the coal on board of vessels.

It was believed a couple of weeks since that work at the various mines in the district would run slack from about the 10th of March on. The talk of war however, has changed the sentiment, and it is believed that some large contracts will be placed in this district.

The output for the first two months has been heavy. There has been but little slack work in any part of the State this year. While the miners have been anticipating an advance in their wages, the prices have not been changed, and no better prices have been obtained by the companies for the product.

Buffalo. March 10.

(From Our Special Correspondent.)

The anthracite coal trade is fairly active, considering the mild weather prevailing in this section of New York State and Ohio. Prices nominally unchanged. No news of consequence.

The Cleveland and Detroit freight and passenger boats intend commencing the season's business about March 15th, there being but little, if any, trouble with ice at the upper end of Lake Erie and the Detroit River. Most stations on the lakes, however, report a thickening of ice during the last week of February and the first week of March. Our old salts prophesy that the opening of navigation this year will be from April 10th to 15th.

At Cleveland no chartering for coal will be done until season ore rates are fixed. Coal tonnage for the head of Lake Superior for the season is on the market at 25c. per net ton. One owner offered to take 100,000 tons at that figure, and other propositions have been made.

Buffalo's Pan-American Exposition project has been postponed for the present indefinitely, but hopes are entertained that matters will be satisfactorily arranged when the complications are settled and recognition can be obtained from Congress in the shape of an appropriation. The plans should certainly be carried out, if not in 1899, then in 1900 or 1901.

Chicago. March 9.

(From Our Special Correspondent.)

Anthracite coal has been in very limited demand during the week, sales having even been less than last week, on account of the spring-like weather. It is a fact that hard coal sales are now at the lowest notch observed in years, dealers generally buying but little and have no inclination, as things look, to buy more. The amount of inquiries coming in have decreased largely, and the market looks as though it would be even more stagnant than at present. Sales-agents claim that the recent advanced prices are being maintained, but it is highly probable that under present bad conditions these prices will not hold, for it is the advance that has brought the movement of hard coal almost to a standstill. Circular prices are: Grate, $5; egg, stove and chestnut, $5.25.

Bituminous Coal.—There has been but little activity in soft coal during the week. The warm weather that has been prevailing here for the past two weeks has been one cause for the quiet business. The large office buildings have had but little steam on for heating purposes, and that has had a great deal to do with business. Manufacturing lines are buying but little coal at the present time, most of them depending on supplies already in or buying just enough for actual necessity. There is a great abundance of soft coal in town, and a break in the already low prices is possible at any time.

Pittsburg. March 10.

(From Our Special Correspondent.)

Coal.—The Pittsburg coal operators interested in the combination to purchase the 11 elevators at Cincinnati and the control of the coal market in that city held a meeting, but another meeting will be held to decide the matter.

The Lutz coal firm intend hereafter to have their large tow boats come through to Pittsburg and take their tows from here instead of towing back from Louisville. This will obviate a good deal of expense in loading coal at Louisville.

Near Bellevernon about $200,000 will be expended by the J. H. Somers Fuel Company in developing a tract of coal under the Fairman and Large farms; the mine when opened and equipped will be the largest in Western Pennsylvania and give work to 600 men.

The Younghiogheny River Coal Company is the first mining company to conform to the new screen conditions prescribed by the Chicago convention. River coal shipments for February 9th were 500,000 bushels.

Connellsville Coke Region.—The trade is not only holding its own, but is making some gains, giving promise of continued activity. All the furnaces in the Pittsburg district are running full and the general activity in the pig iron market continues. Prices are also keeping up well, so that at the present rate of production and with the present prices the revenue from coke will be greater here this year than ever before. Production last week was about 156,759 tons, which is about the same as the week previous. The shipments aggregated 8,725 tons. Summary for the week shows 15,152 ovens in blast, with 3,608 ovens idle. The production of the region was 156,759 tons. In the running order of the ovens in blast 5,886 ovens made six days, 9,152 ovens made five days, 64 ovens made four days,, and 50 ovens, the Semet-Solvay by-product plant, seven days, an average of 5.40 days as against 5.36 days the week previous. The H. C. Frick Coke Company made five days; at 27 plants of the plants controlled by the Frick Company, four made six days and five made five days. The McClure Company made five days on seven plants. The shipments were: To Pittsburg, 2,825 cars; shipped West, 4,484 cars; to points East, 1,416 cars. Total, 8,725. Furnace coke nominal, $1.75.

Shanghai, China. Feb. 9.

(Special Report of Wheelock & Co.)

Coal.—Japan coal tends upward owing to a scarcity of supplies; Cardiff is featureless, and Sydney Wollongong shows some inquiry. Arrivals of all kinds of coal during the fortnight amounted to 19,229 tons. Quotations are as follows: American anthracite, 15 taels per ton; Cardiff, 17 taels; Australian Wollongong, 13 taels for steamer cargo.

Kerosene Oil.—Very little business has been done in spot American oil. Arrivals aggregated 156,200 cases, and stocks are now estimated at 409,520 cases. In Batum a small business has been passing among the natives; stocks are 182,000 cases. Langkat is steady, with 48,000 cases in stock. Quotations per case are as follows: American Devoe's, 1.61½ taels; Russian Batum, Anchor Chop, 1.54 taels; Horse Chop, 1.52½ taels per case, and bulk oil, 1.37½ taels per two tins; Langkat (Sumatra), 1.50 taels per case.

ROOFING SLATE.

Strength is not the prominent feature in the slate trade, though a few sizes of certain favorite roofing slates, particularly in Unfading Green for export, are in active demand. The market is consuming fully as many mill products, and all kinds of merchantable slate other than roofing, as a year ago, but prices rule lower. In the localities where roofing slates are largely used the looked-for building revival has not materialized, and opinions differ relative to export trade for 1898. Under such circumstances, it is not surprising that considerable stocks are accumulating at the quarries. In this respect Sea Green leads, with over 90,000 squares on hand March 1st. Last week the Vermont Slate Company—the Sea Green syndicate—held a meeting at Buffalo, which was well attended. No change has been announced in the price list reported. Otherwise, there is nothing specially new to note.

In the table below, which is the most comprehensive one of the kind ever published, the current prices per square for No. 1 slate of standard brands are given. The quotations are all f. o. b. at quarries. Railroad freight to export point is from $1 to $1.50 per square additional:

Prices of Roofing Slate.

Size, inches.	Monson, or Brownville.	Bangor.	Bangor Ribbon.	Albion, or Jackson Bangor.	Lehigh.	Peach Bottom.	Sea Green.	Unfading Green	Red.
	$	$	$	$	$	$	$	$	$
24 x 14....	6.10	3 50	3.00	3.25	3.50	4.85	2.90	4 50	.....
24 x 12....	6.60	3.50	3.00	3.25	3.50	5.00	2.90	4.50	.....
22 x 12 ...	6 60	3.60	3.00	3.25	3.50	5.00	2.95	4.50	...
22 x 11 ..	6.50	3.60	3.10	3.25	3.75	5.00	2.95	4.50	.....
20 x 12....	6 90	3.60	3.10	3 25	3.75	5.00	2 95	...	.....
20 x 10 ..	6.80	4 25	3.35	3.50	3.80	5.10	3.05	4.80	10.50
18 x 12 ...	6.80	3.60	.....	3.25	....	5.00	2.95	...	...
18 x 10....	7.20	4.25	3.35	3.50	3.80	5.10	2.95	4.80	10.50
18 x 9....	7.10	4.40	3.35	3 50	3.80	5.10	2.95	5 00	10 50
16 x 12....	6.80	3.60	.....	3.25	.....	.....	2.90	...	...
16 x 10....	7.10	4 00	3 25	3.50	3.80	5.00	2.90	...	10.50
16 x 9....	7.00	4 25	.....	3.50	3.80	5.10	2.85	5.00	10.50
16 x 8. ..	7.20	4.25	3.25	3.50	3.80	5.10	2.85	5 00	10.50
14 x 10....	6 60	3.60	2.25	3 25	3 75	...	2.85	4 80	10.50
14 x 8....	6 59	3.75	3.25	3.25	3.40	4.85	2.45	...	10.50
14 x 7 ..	....	3.90	3 25	3 25	3.40	4.85	2.15	...	10 50
12 x 8 ...	.....	3.25	.....	3.25	3.25	4 60	2.15	4.00	9 00
12 x 7....	.....	3.25	.....	3.25	3.25	4.60	.....	4.00	9.00
12 x 6....	.....	3 25	.....	3 25	3.25	4.60	.....	4 00	8.50

(A square of slate is 100 sq. ft. as laid on the roof.)

In Brownville and Monson delivery quotations can be had somewhat lower than above, which is also true of other brands. No. 1 Bangor are 50c. extra when full 3-16-in. thick, and $1 more when guaranteed ¼-in. thick. Purple sizes run 24 by 12 to 18 by 9, and vary from $3.75 to $4 per square. Variegated and Mottled are the cheapest roofing slates, at $1.75@$2.25 per square.

IRON MARKET REVIEW.

NEW YORK, Friday Evening, March 11, 1898.

Pig Iron Production and Furnaces in Blast.

Fuel used.	Week ending Mar. 12, 1897.		Week ending Mar. 11, 1898.		From Jan., '97.	From Jan., '98.
	F'ces.	Tons.	F'ces.	Tons.	Tons	Tons.
Anthracite..	31	18,600	27	18.550	191,486	181,400
Coke..	108	147,500	150	210,850	1,422 914	2 060,500
Charcoal....	18	5,550	16	5,950	58,436	54,000
Totals	157	171,650	193	235,350	1,672,836	2,295.900

The iron trade is in the same condition. Production continues on a very large scale and sales are heavy, but prices do not increase materially. Buyers are not to be frightened into paying higher prices while the furnaces are turning out pig iron at the rate of over 12,000,000 tons a year. The war talk rather stimulates the trade, with the hope of heavy orders for new ships, guns and the like.

A large order for ship plates from Philadelphia has gone West, having been divided between the Carnegie and Illinois Steel companies.

The railroad business is increasing. While orders for rails have not been large, there has been a heavy business in car material, and the locomotive builders are also in the market.

Still further negotiations are going on among the Alabama iron men. They have reached a practical agreement to maintain prices, though the plan of a central selling agency has not been adopted. Another meeting is to be held in New York next week.

Some talk has been going on over a proposed combination of the furnaces in the Pittsburg district, the Mahoning and the Shenango Valleys, to maintain the price and regulate the output of Bessemer pig. It is understood that some conferences have been held, but a definite result is still very doubtful.

The formation of the Wire Trust is still incomplete. The difficult matter of adjustment of valuation has been productive of dissensions which may result in giving up the plan, though it is quite possible that it will be carried through.

The proposed tin-plate combination has fallen through, there being serious differences between the Eastern and the Western mills, which it seems impossible to harmonize.

New York. March 11.

The local iron market shows little change from the dullness that has prevailed for some time, although certain lines are fairly active.

The export trade continues to show a very fair run of inquiries and numerous shipments. Among the orders placed during the week are $12,000 worth of iron-working machinery, two large boilers and an engine for Argentina; 15 mogul locomotives to be built by the Baldwin

Company for the Egyptian State Railroad; 5,000 tons of iron pipe for South Africa; 2,000 tons of steel rails, the same amount of iron pipe and 3 locomotives for Japan; several miles of steel pipe and a large pumping engine for Australia, and $22,000 worth of electrical material for Germany.

Pig Iron.—There is no strength to the market and sales are irregular. As to Southern irons, is is said on good authority that those furnaces in the recent agreement simply bound themselves to pass their sales through a central office. This is to prevent cutting, and implies no advance in prices.

We quote Northern brands, tidewater delivery, No. 1 X foundry, $11.25@$11.75; No. 2 X foundry, $10.75@$11.25; No. 2 plain, $10.25@$10.75; gray forge, $10.25@$10.50. Southern brands, New York delivery, No. 1 foundry, $10.75@$11.25; No. 2 foundry, $10.25@$10.75; No. 1 soft, $10.75@$11.25; No. 2 soft, $10.25@$10.75; No. 3, $10@$10.50; basic, $10.50@$11.

Bar Iron.—There is little change to the market, which is pretty dull. We quote: Common f. o. b. dock, 1.05c.; refined, 1.15c.

Steel Billets and Rods.—Demand for billets increased, some very fair contracts having been announced. While the price yet holds at $15.50 f. o. b. mills, the market is stronger and an advance is predicted. Rods are quoted at $23 f. o. b. mills, with fair market for small orders.

Plates.—There is a good run of business. We note two contracts of 1,000 tons each, both taken by a well-known Eastern mill. Quotations are 1.30@1.40c. for No. 10 to 3-16, and 1.18@1.20c. for heavier tidewater delivery. Universals, 1.15@1.20c. Flange is 1.35@1.40c.; shell, 1.30@1.35c. Charcoal iron plates, 2.25c. for shell, 2.75c. for flange, and 3.25c. for firebox. Rivets are 2.25@2.50c. for iron and 1.75@1.85c. for steel.

Structural Material.—Several good contracts are reported, and the market is looking up. Quotations are: Beams, 1.30@1.35c.; angles, 1.15@1.20c.; tees, 1.35@1.40c.; channels, 1.30@1.35c.

Steel Rails and Fastenings.—Business continues fair. There are indications that the established price of $18 for standard sections is being shaded, but quotations are: Standard sections, $18; girder rails, $23 up, according to specifications. Light rails are quoted: 12 lb., $24; 16 lb., $22; 20 lb., $22; 25 lb., $20; 30 lb., $20; 35 lb., $20, up to standard, $19, with the usual 10 per cent. advance for small orders, all f. o. b. mills.

Track fastenings are quoted: Angle bars, 1.15c.; spikes, 1.45@1.55c.; bolts, 1,70@1.80c.; fish plates, 1.20c.

Wrought Iron Pipe.—The market is quiet, and liberal inducements are given for desirable orders. The list discounts are: Black pipe, 57 per cent. for ⅜ in. to 1¼ in., and 67 per cent. for 1½ in. up. Galvanized, 50 per cent. for small sizes and 50 per cent. for 1½ in. up.

Old Material.—Market this week is firmer and a fair business has been done, especially in old iron rails, which are quoted at $10@$11, according to quality. Old steel rails hold firm at $9; wrought iron scrap, $10; hammered car axles, $14.50; machinery cast, $9.50; burnt iron, $5@$5.50; all New York City delivery.

Birmingham, Ala. March 7.

(From Our Special Correspondent.)

The furnacemen in this district are living in hopes than an increased demand for pig iron will come in the near future. The furnaces are working as hard as they can, and much iron is being shipped, but few orders are going down on the books. The prices are not so bad, everything taken into consideration, as was expected. There seems to have been a false impression given out from this district concerning pig iron quotations. There has been no open war. The furnacemen have all agreed about the cutting of prices, and will abstain from that work in the future. There was no compact made, nor trust formed, but simply an agreement.

The production is a little larger just now than the consumption. There is much iron being exported. On Friday last the British steamship "Indrani," T. Trotter, captain, cleared at New Orleans for ports in Japan loaded with 12,500 bales of cotton and 3,800 tons of pig iron. The pig iron was loaded at the port of Mobile and was from this district. It is bound for Kobe, Japan, and is one of the orders received from that country a short while since. During the past week orders for pig iron were received from Amsterdam, Bremen and another foreign point. The Tennessee Coal, Iron and Railroad Company and the Sloss Iron and Steel Company have booked several export orders, which will take them a couple of months yet to fill. The domestic market is where the furnacemen are looking for an improvement, as it is yet quite unsatisfactory.

The following quotations are given on pig iron in this district: No. 1 foundry, $7.25@$7.50; No 2 foundry, $7@$7.25; No. 3 foundry, $7; gray forge, $6.50; No. 1 soft, $7.25@$7.50; No. 2 soft $7@$7.25. It was stated here that pig iron had sold for $8.25. Upon investigation by one of the committee of the miners it was ascertained that there was a little silver-gray iron being made which did bring about $8.25 per ton, but the quantity was very small.

The foundries in the Birmingham district are working at full force. The Birmingham Machine and Foundry Company is at work on machinery for an electric station for the Birmingham Traction Company, while the same concern has other good orders on hand. The Warrior Machine and Foundry Company has got a large contract pending.

Cleveland. March 9.

(From Our Special Correspondent.)

Iron Ore.—Nothing has as yet been done toward the sale of ores for the new year. Sellers are ready for the buyers, however, whenever they are ready to enter the market. It was said yesterday that the prices fixed for the current year would not go into general effect until May 1st, when navigation opened on the upper lakes. The sales made during the past week were for present uses, simply to supply the immediate needs of the furnacemen. All the transactions were at the list prices of last year, which follow: Specular and magnetic ores, Bessemer quality, $3@$3.75; specular and magnetic ores, non-Bessemer quality, $2.50@$2.75; hematite ores, Bessemer quality, $2.50@$3; hematite ores, non-Bessemer quality, $2@$2.50.

Pig Iron.—The condition of the market this week is only fair. A few transactions are reported in Bessemer, but the movement of the other varieties has been rather slow. The quotations remain the same as last week, as follows: Lake Superior charcoal, $11.75; Bessemer, $10.25@$10.75; No. 1 foundry, $10.65@$10.75; No. 2, $10.25@$10.50; No. 1 Ohio Scotch, $10.75@$11; No. 2, $10.25@$10.50; gray forge, $9.50@$9.75.

Philadelphia. March 11.

(From Our Special Correspondent.)

Pig Iron.—In a general way iron trade conditions are more satisfactory. Prices have held their own in face of the withholding of a large volume of business. Consumptive requirements are unabated. The expansion of pig iron production has not been attended by an increase of stocks. The Western situation is evidently more satisfactory than in the East. Manufacturers keep all hope of stronger prices back by fighting for business. Nothing has occurred within six days to change the situation, and the brokers report an indifference among buyers as to any further covering of early summer requirements. Quotations are: No. 1X foundry, $11.75@$12; No. 2X foundry, $10.75@$11; No. 2 plain, $10.50; standard mill iron, $10.25; ordinary, $9.75; basic, $10; low phosphorus, $15.15; Bessemer, $12.

Billets.—Influences of Western origin have hardened quotations here since Tuesday, but whether prices go up or down a trifle is a matter that has no effect on our buyers. The expected increase of billets has not shown itself. Consumers are satisfied to take their chances and buy when they need the billets. To-day's quotation is $17.50.

Merchant Iron.—The quotations are not as strong as a week ago. The mills have less work. As orders are executed, new orders do not take their place. The best equipped mills make strong inducements to buyers, in order to keep running to full capacity. Common bars are 1.05@1.10c.; refined, 1.10@1.15c.; steel bars, 1.15@1.25c.

Sheets.—Manufacturers repeat to-day what they said last week. There are no signs of weakness. Competition does not allow fat margins, but there are no fluctuations. Manufacturers understand the situation and act accordingly.

Pipe and Tubes.—The filling up of Western mills has helped quotations here, or at least made it easier to get fair prices. The small buying and the machine shop demand is showing itself this week. Some business was done this week of a satisfactory character.

Merchant Steel.—Our users of merchant steel closed more business this week than they have transacted during the month previous. Prices have been made at mill that meet with the views of those large buyers whose wants make times lively at mills. The agents expect to do a good deal more business next week in a large way.

Plate and Tank.—A big week's business has been done in all kinds of plate mill material, and within a day or two two or three new inquiries loomed up that may result in business, and if so, it will make quite a stir. The Cramps placed their order for 4,000 tons material; the announcement was made Wednesday, but Western mills got the hull plates and shapes. The Illinois Steel Co. got the boiler steel. Tank plates, 1.15c.; universals, 1.20c.; flange, 1.25c.; firebox, 1.50@2.25c.

Structural Materials.—We ought to have a few big lots of steel work in two or three days. Those who are in a position to speak, say orders for two or three thousand tons are practically placed. Angles are 1.20c.; beams and channels, 1.30@1.50c. More new work is promised for next week.

Steel Rails.—Rails are said to be in active demand in a small way at $18.

Old Rails.—A hitch has occurred in one or two expected old rail transactions. Quotations are still $12.50.

Scrap.—The active efforts of a few hustlers to get an abundance of quick-selling scrap for early spring appears to have resulted in getting more scrap than is immediately wanted, but there is no weakness in prices as yet. Choice railroad is $12.25@$13; heavy steel scrap, $10@$10.50; No. 1 yard scrap, $11; wrought turnings, $8; steel axles, $12.

Pittsburg. March. 10.

(From Our Special Correspondent.)

There is but little change in either raw or manufactured products. The volume of business continues large, but the supply appears to keep a little ahead; consequently, prices show but little advance. The trade is growing weary of doing business on such narrow margins, and a change for the better is most ardently desired. No miscalculations have been made in regard to the demand, but it was hardly conceivable that the supply could be increased to such an extent as it has been. The trade is beginning to realize that they will have to adjust themselves to close margins; but something better than those now available will be required if the present rate of production is to be maintained. The increased number of inquiries from buyers of pig iron, however, indicates greater confidence in the future course of the market.

The first sale of pig iron for all-year delivery was made in the Valley, 4,000 tons Bessemer from April to December, at $10. This sale would seem to mark prices for the present. Some of the heaviest consumers of pig iron are beginning to look upon the market as not likely to go any lower, and are, therefore, making preparations to take advantage of present prices for future deliveries. Apart from the home trade the foreign demand shows continued growth.

Wrought Iron and Steel Pipe.—The improvement noted last week continues; the advance in crude oil has stimulated the market; mills are running full, with order books well filled; the Pennsylvania Tube Works are at work on a 90-mile contract.

Sheet Bars in fair demand; sales at $17.50@17.80 delivered. Wire Nails are firm, with sales at $1.50, with an upward tendency. Scrap material and old rails are in demand and firm.

Latest.—Business continues to move along smoothly, showing but little change. Prices of Bessemer are firm. Valley furnaces are asking $10 for late deliveries. Steel Billets are firm, with a fair demand. Mill Iron is dull, but not quotably lower. Foundry irons are quiet; demand light. For sheet bars the demand has been kept up well and prices maintained.

By Telegraph.

Pittsburg, Pa., March 11th.—There has been great activity in Bessemer pig, with an advance in prices. Large sales were made to-day on a basis of $9.80@$10 per ton at Valley furnaces, and $10.50 per ton Pittsburg, from city furnaces. This week's sales of Bessemer pig in Pittsburg amount to a total of 63,500 tons.

COKE, SMELTED LAKE AND NATIVE ORE.

Tons.	Cash.
10,000 B., 2d Quar., V..	$9.75
5,500 B., A., M., J., V.	9.65
5,000 B., M., J., V.....	9.60
5,000 B , J., A , S., V.	9 75
5,000 B., M., J . V....	9 60
4,000 B., A. to D., V...	10.00
3,000 3d Quar., V	9.75
3,000 B., M., A., P.....	10 40
2,500 B., A., M., V.....	9.75
2,000 B., M., A., V.....	9.65
1,000 Mill Ir., del., P...	9.25
500 Mill Ir., A., V....	8 60
500 Mill Ir., M., V...	8 65
400 Off. Bess., P.....	9.50
200 Bess., spot, P	10.40
25 No. 2 Fdry., P...	10.25

CHARCOAL.

50 No. 2, F'd'y. P ..	$15.00
25 Warm Blast, P...	15.00
25 W. B. Ex., P. ...	21 00
25 Cold Blast, P.....	21 00

BLOOMS, BILLETS, SLABS.

4,000 Bill., A., M.. P.	$15.50
3,000 Bill., A . M., P..	15 65
2 500 Bill., A. M., P....	16 00
500 Bill., A., P.....	15.60
500 Bill , mkr's mill, P.....	15 25
150 Bill.. mkr's mill, P.....	15.25

STEEL WIRE RODS.

500 Delivered, P.....	$23.00
400 Delivered P.....	22 60
300 Delivered, P.....	22.40

SHEET BARS.

Tons.	Cash.
1,200 Delivered, P.....	$17 75
1,000 Delivered, P.....	17.80
950 Delivered, P.....	17 80
800 Delivered, P.....	17.50

MUCK BAR.

600 Neutral del., P..	$18 50

SKELP IRON.

800 W. Grov'd, P.	1.20 4 m.
600 N. Grov'd. P..	1 20 4 m.
500 Sheared, P....	1 30 4 m.

SKELP STEEL.

800 W.Grov., P.	0.97½ 4 m.
650 N.Grov., P.	$0.97½ 4 m.
550 Sheared, P ..	1.10 4 m.

BLOOMS, BILLETS, BAR ENDS.

625 Bill. Ends, P.....	$10.00

FERRO MANGANESE

300 80 per cent , P...	$46.00

OLD IRON AND STEEL RAILS.

500 Ir. Rail, gross, V	$13 85
500 Steel Rails, long gross, P..	10.80
300 Steel Rails, short gross P.....	11 50
300 Ir. Rail, gross, P.	14.00

SCRAP MATERIAL.

500 No. 1 R. R. W., net, V	$11 85
500 Old Car W. gr., P.	10.25
300 No. 1 R R. scrap, gross, P.....	9.25
200 Scrap, heavy, gr., P	10.50
100 No. 1 R. R , W , net, P.....	11.75

METAL MARKET.

NEW YORK, Friday Evening, March 11, 1898.

Gold and Silver.

Price of Silver per Ounce Troy.

March.	St. Ex.	London Pence.	N. Y. Cts.	Value of Sil. in $1.	March.	St. Ex	London Pence.	N. Y. Cts.	Value of Sil. in $1.
5	4.84	25 3/8	54 5/8	.422	8	4.84	25 1/8	54 1/4	.419
7	4.84	25 3/16	54 1/4	.419	10	4.84	25 5/16	54 3/8	.420
8	4.84	25 1/8	54 1/8	.418	11	4.83 3/4	25 3/16	54 1/4	.419

The market has been quiet. London is a moderate buyer. There is a fair request for May delivery, and the tone of the market is steady without any positive tendency.

The United States Assay Office in New York reports the total receipts of silver at 103,000 oz. for the week.

Average Monthly Prices of Silver.

In New York and London, per ounce Troy, from January 1st, 1898, and for the years 1897 and 1896.

Month.	1898.		1897.		1896.	
	London. Pence.	New York. Cents.	London. Pence.	New York. Cents.	London. Pence.	New York. Cents.
January...	26.29	56.77	29.74	64.79	30.69	67.13
February..	25.89	56.07	29.68	64.67	31.01	67.67
March....	.....	.....	28.96	63 06	31.34	68.40
April.....	.....	.....	28.36	61.85	31.10	67.92
May.....	.....	.....	27.86	60.42	31.08	67.88
June	.....	.....	27.58	60.10	31.46	68.69
July.....	.....	.....	27.36	59.61	31.45	68 75
August....	.....	.....	24.93	54.19	30 93	67.34
September	.....	.....	25 66	55.24	30.19	65.68
October ...	.....	.....	26.77	57.57	29.68	65.05
November	.....	.....	26 87	57.93	29.46	64.98
December.	.....	.....	26.83	58.01	29.70	65.24
Year.....	.....	.....	27 55	59.79	30.67	67.06

The New York prices are always per fine ounce, or ounce of pure silver; the London quotation is per standard ounce or for metal 925 fine.

Gold and Silver Exports and Imports

At all United States ports, January, 1898, and years from January 1st, 1898 and 1897:

	Coin and Bullion		In ores.		Total excess, Exp. or imp.
	Exports.	Imports.	Exports.	Imports.	
GOLD					
Jan..	$2 634,289	$5,622,546	$2 468	$776,638	I. $3,762,427
1898..	2,634,289	5,622.546	2,468	776.638	I. 3,762,427
1897..	371,944	556,621	70,411	386,6?5	I. 500,951
SILV.					
Jan..	4,262,396	542,315	39,424	1,993,959	E. 1,766,546
1898..	4,262.396	542,315	39,424	1,993,959	E. 1,766,546
1897..	3,997,754	877,067	156,903	1 907,479	E. 1,370,111

Gold and Silver Exports and Imports. New York

For the week ending March 11th, 1898, and for years from January 1st, 1898, 1897, 1896, 1895.

Period.	Gold.		Silver.		Total Excess, Exp. or Imp.
	Exports.	Imports	Exports.	Imports.	
We'k	$100,250	$3,596,096	$521.015	$57,765	I. $3, 32,596
1898..	3,530,136	7,686,789	8,012,650	535,505	E. 3,320,501
1897..	902,361	852,735	7,795,977	408,952	E. 7,436,651
1896..	9.755,885	15,935,138	7,855,989	360,571	E. 1,316,165
1895..	27,507,579	9,436,681	6,159,189	289,698	E 23,940,389

The gold exported for the week went to the West Indies; the silver went chiefly to London. Of the gold imported $243,325 came from Liverpool, $1,172,978 from Havre and $1,503,486 from Bremen. The balance, together with the silver, came from Central and South America and the West Indies.

Financial Notes of the Week.

Business continues unsettled by the war and other rumors. The opinion of the majority is undoubtedly against war, though the $50,000,000 special appropriation made by Congress this week is generally approved as a precautionary measure. The outlook is doubtful, and business men generally are inclined to be very cautious about making new engagements.

The gold imports still continue, and considerable amounts are being taken in London and Paris for New York account. The total so far reported is 15,750,000. It is evident that bankers here are calling in foreign loans and strengthening their position in view of a possible heavy demand for money here, and to provide for contingencies. The Treasury is gaining gold, largely through increased payments in coin at the custom houses.

In the British House of Commons on March 28th a resolution will be presented asking the appointment of a commission to take up the whole question of bimetallism in Great Britain and India. The Bimetallic League has issued a manifesto reviewing the situation, protesting against a gold standard for India, and urging the British Government to resume negotiations with the United States and France.

We long ago reached the conclusion, however, that no practical help to the bimetallic cause is to be expected from this source.

The statement of the United States Treasury on Thursday, March 10th, shows balances in excess of outstanding certificates as below, comparison being made with the statement for the corresponding date last week:

	Mar. 3.	Mar. 10.	Changes.
Gold	$167,947,557	$169,087,286	I. $1,139,729
Silver	13,886,238	13,013,709	D. 872,529
Legal tenders....	35,811,260	38,839,293	I. 3,028,033
Treas. notes, &c.	5,880,047	4,886,859	D. 993,188
Totals	$223,525,102	$225,827,147	I. $2,302,045

Treasury deposits with national banks amounted to $31,946,693, an increase of $541,160 during the week.

The statement of the New York banks—including the 66 banks represented in the Clearing House—for the week ending March 5th gives the following totals, comparison being made with the corresponding weeks in 1897 and 1896:

	1896.	1897.	1898.
Loans and discounts..	$464,488,900	$502,061,800	$628,256,400
Deposits	408,884,400	577,461,100	706,020,400
Circulation	13,983,800	16,406,200	13,774,900
Reserve:			
Specie	61,538,100	85,061,700	120,125,900
Legal tenders	83,917,500	114,860,500	77,202,700
Total reserve	$145,455,600	$199,922,200	$197,328,600
Legal requirement ...	122,221,100	144,365,250	176,505,100
Surplus reserve	$23,234,500	$55,556,950	$20,823,500

Changes for the week, this year, were increases of $47,200 in circulation, and $939,400 in specie; decreases were $13,622,000 in loans and discounts, $23,193,900 in deposits, $8,873,700 in legal tenders, and $2,135,825 in surplus reserve.

The following table shows the specie holdings of the leading banks of the world at the latest dates covered by their reports. The amounts are reduced to dollars, and comparison is made with the holdings at the corresponding dates last year:

	——1897.——		——1898.——	
Banks.	Gold.	Silver.	Gold.	Silver.
N. Y. Assoc..	$85,061,700	———	$120,125,900	———
England	196,990,270	———	168,129,950	———
France	382,780,389	$245,427,261	376,603,900	$242,421,500
Germany	228,990,000	———	202,440,000	———
Austro-Hun.	154,510,000	63,325,000	153,757,500	52,062,000
Spain	42,640,000	54,445,000	47,585,000	53,565,000
Belgium	21,505,000	———	21,697,600	———
Netherl'ds ..	13,170,000	34,605,000	13,215,000	34,430,000
Italy	61,750,000	11,590,000	60,080,000	10,675,000
Russia	464,075,000	———	585,040,000	———

The returns for the Associated Banks of New York are of date of March 5th; the Bank of Italy, January 31st; the Bank of Russia, February 1st-13th; the banks of Spain and the Netherlands, February 19th; the banks of Belgium March 7th, and the others are of date of March 10th. The New York banks do not report silver separately, but the specie carried is chiefly gold coin. The Bank of England and the Bank of Russia report gold only. The Imperial Bank of Germany and the Belgian National Bank do not report gold and silver separately.

Shipments of silver from London to the East for the year up to February 24th are reported by Messrs. Pixley & Abell's circular as below:

	1897.	1898.	Changes.
India	£717,600	£1,029,400	I. £311,800
China	19,550	154,096	I. 134,546
The Straits	35,493	94,784	I. 59,291
Totals	£772,643	£1,278,280	I. £505,637

Arrivals for the week this year were £99,000 in bar silver from New York. Shipments were £171,000 in bar silver to India and £33,500 to China; a total of £204,500. Special reports in January, 1898, were £81,000 in bar silver to Russia, £74,000 to Germany, £17,000 to France, and £56,000 to Spain; a total of £228,000.

Indian exchange continues strong. The demand for money in India is very great and the banks have been charging from 11 to 14% for discounts. All the Council bills offered in London have been taken at an average of 15.87d. per rupee. Very few silver shipments are being made to India.

The "Chilean Times," lately received, says: "In accordance with the law of 1896 the Government notes on December 31st ceased to be legal tender. The outstanding notes, however, will be paid in gold in the Government offices appointed for this purpose, and they will not be reissued, but incinerated. With respect to notes of the banks, of the total issue of $19,000,000 about $8,000,000 have been exchanged for gold, and the banks have the option of two methods of redeeming these notes. The one is to repay the Government, in gold, the value of these notes; and the other is to give in payment bills bearing interest at 6 per cent. per annum, and with a monthly amortisation of 3 per cent. The latter method will give the banks which may take advantage of it 33 1-3 months in which to discharge their indebtedness to the Government. Notes redeemed under the first method may be reissued; under the second they will be destroyed. The principal institution of credit in the country has provided itself with a sum of $1,500,000 for the ransom of its notes, and this circumstance, conjointly with other matters related to conversion, is quite sufficient to allay any apprehension with respect to the amount of circulating medium, or to the ability of the banks to fulfill their engagements. Conversion is at last an accomplished fact."

Prices of Foreign Coins.

	Bid.	Asked
Mexican dollars.....	$ .44	$ .45
Peruvian soles and Chilean pesos.....	.39¼	.41
Victoria sovereigns.....	4.84	4.87
Twenty francs.....	3.84	3.87
Twenty marks	4.74	4.78
Spanish 25 pesetas.....	4.78	4.80

Other Metals.

Copper.—Early in the week business was almost entirely at a standstill on account of the serious political outlook, but as soon as the situation became somewhat more reassuring, copper was among the first articles to evince great strength, and we can report the sale by the Calumet & Hecla of at least 3,000,000 lbs. at 12c. Some of the smaller companies refuse to sell even at this price, preferring to await the opening of navigation toward the end of next month. As it is, there is a certain scarcity of Lake copper, all available stocks being exhausted. For electrolytic copper in cakes, wire bars or ingots, we have to quote 11.50c. and for cathodes 11.25c.,

Imports and Exports of Metals.

Port.	Week, Mar. 2.		Year, 1898.	
	Expts.	Impts.	Expts.	Impts.
*New York.				
Aluminum, boxes	.....	.....	144	.....
Antimony ore...short tons	.....	43	.....	257
" regulus. .casks	.....	.....	.....	.....
Brass, old..... .short tons	.....	7	66	.....
Chrome ore	.....	.....	.....	.....
Copper, fine .....long tons	$683	113	8,389	824
" ore..... " "	.....	.....	.....	.....
" matte... " "	374	.....	2,297	345
" sulphate " "	$371	.....	1,192	.....
Ferro-chrome.. " "	.....	.....	.....	163
Ferro-mangan'se " "	.....	.....	462	.....
Ferro-silicon..... " "	.....	.....	.....	5
Iron ore ..... " "	.....	.....	.....	37
" old..... " "	.....	.....	224	.....
" pipe..... " "	33	.....	1,544	.....
" pig, bar, rod " "	277	25	2,706	6,196
Lead, antimonial " "	.....	.....	.....	.....
" bullion.... " "	1,487	2,898	10,509	19,020
§Lead ore..... " "	.....	.....	.....	370
Manganese ore.. " "	.....	1,188	.....	3,249
Nails..... " "	.....	.....	12	.....
Nickel ..... " "	65	.....	486	10
Rails, old ..... " "	.....	.....	1,505	.....
Spiegeleisen..... " "	.....	91	.....	241
Steel billets, rods " "	.....	627	1,255	1,382
Tin ..... " "	.....	$215	.....	3,130
" dross..... " "	.....	.....	20	.....
" and black plates boxes.	.....	37,429	.....	330,676
Wire.....bundles	.....	.....	122	.....
Zinc.....long tons	.....	25	1,634	75
" dross..... " "	46	.....	364	55
†§Ba'timore.				
Aluminum.....lbs.	21,875	.....	21 875	.....
Brass scrap.....long tons	.....	.....	.....	.....
Chrome ore..... " "	.....	.....	.....	2,400
Copper, fine..... " "	479	.....	4,564	.....
" matte " "	.....	.....	.....	.....
" sulphate " "	90	.....	688	.....
Ferro manganese " "	.....	93	258	200
Ferro silicon..... " "	.....	.....	.....	100
Iron ore..... " "	.....	3,149	.....	62,307
" pig, bar, etc. " "	9	.....	845	.....
" pipe..... " "	379	.....	1,399	.....
Lead..... " "	.....	.....	10	.....
Manganese..... " "	.....	.....	512	.....
Nails..... " "	10	.....	10	.....
Rails, steel..... " "	.....	.....	3,852	.....
Silicon..... " "	.....	.....	.....	10
Spiegeleisen..... " "	.....	20	.....	537
Steel..... " "	86	.....	3,345	.....
" wire ..... bundles	.....	.....	2,700	656
Tin.....long tons	.....	.....	.....	1,000
" and black plates, boxes	.....	231	.....	5,461
Wire .....bundles	79	.....	101	441
Zinc.....long tons	.....	.....	.....	.....
" dross..... " "	48	.....	64	.....
*Philadelphia.				
Antimony ..... casks	.....	.....	.....	.....
Chrome ore.....	.....	.....	.....	.....
Copper ore.....long tons	.....	8,094	.....	18,482
Ferro manganese " "	.....	.....	.....	98
Iron ore..... " "	.....	2,997	.....	15,252
" pig..... " "	.....	.....	.....	100
" pyrites ..... " "	.....	.....	.....	.....
Manganese ore.. " "	.....	.....	.....	10,900
Spiegeleisen..... " "	.....	.....	.....	100
Tin..... " "	.....	.....	.....	25
" and black plates, boxes	.....	.....	.....	4,231

*New York Metal Exchange returns. †From our Special Correspondent. §Week ending March 9.

with casting copper nominal at 11⅛c. These prices are all rather above the European parity, and consequentiy no business for export resulted. Shipments for the first few days of the month showed a heavy falling off, and while they may improve during the balance of the month, they are not likely to come up to the average. Manufacturers are all very busy.

In London the market opened rather firm at £50 5s.@£50 7s. 6d., with a very good business doing. Subsequently, however, alarm over the political situation resulted in a decline of 5s., but the lost ground was quickly regained, and prices close at about the best, £50 7s. 6d.@£50 10s. for spot, and £50 12s. 6d.@£50 15s. for three months prompt. For refined and manufactured we quote: English tough, £52 10s.@£53; best selected, £53 15s.@£54 5s.; strong sheets, £61; India sheets, £58@£59; yellow metal, 5⅛d.

Tin.—Business was somewhat irregular, but on the whole prices were well maintained, and we quote 14.30@14.35c. for spot and 14.40@14.45c. for future delivery.

Abroad, opening prices were about 7s. 6d. higher than the close of last week. Afterward, following the general uncertainty, a slight decline set in, but prices quickly recovered, and the market closes firm at £65 2s. 6d.@£65 5s. for spot, and £65 12s. 6d.@£65 15s., three months prompt.

Lead is not yet established on a healthy footing. The moment prices advance but slightly a great deal of lead comes out, and buyers not being willing to take in round quantities, values slowly decline, and we have to quote to-day for March and April delivery 3.70c. New York. In St. Louis also, business was quite irregular at 3.55@3.57½c.

The foreign market exhibited great strength, and the price for Spanish lead has advanced to £12 12s. 6d.@£12 13s. 9d., English being 5s. higher.

St. Louis Lead Market.—The John Wahl Commission Co. telegraphs us as follows: The market is dull and prices are slowly declining. Common lead is obtainable at 3.57½c., and corroding lead sells at 3.60c. The demand is very light.

Spelter is rather firm, with a good business doing, March delivery especially being rather difficult to obtain. Business is reported in prime Western at 4.25@4.30c. New York, and 4.02½@4.05c. St. Louis.

In Europe there is a good demand for both March and April delivery, and we quote £18 7s. 6d. for good ordinaries, and 2s. 6d. more for specials.

Antimony continues firm at 8¼c. for Cookson's; 7¾@7⅞c. for Hallett's, as well as for Japanese and U. S. Star.

Nickel.—Business continues on unchanged lines, and no alteration in prices can be reported. We quote for ton lots 33½@36c. per lb., and for smaller orders 35½@38c. London prices are 14@16d. per lb., according to size of order. The London price is about on a parity with New York, allowing for the duty of 6c. per lb.

Platinum.—Prices are now quoted at $15@$16 per oz. New York. The London quotation is 58@60s. per oz. Supplies are not large, and prices are firm.

For chemical ware (crucibles and dishes) best hammered metal, (Messrs. Eimer & Amend, New York, furnish the following prices: In lots of 250 grams or more, 56c. per gram; in lots of 100 grams or more, 57c. per gram; less than 100 grams, 58c. per gram; unmanufactured platinum will be supplied in same quantities at 2c. less per gram.

Quicksilver.—The New York quotation remains $39.50 per flask. The London price is £7 2s. 6d. per flask, with the same figure named from second hands.

The Minor Metals.—Quotations are given below for New York delivery:

Aluminum:	Alum-Nickel, ℔ lb.33@39c.
No. 1, 90% ingots,	Bismuth, ℔ lb..$1.30@$1.80
℔ lb .....34@40c.	Phosphorus, ℔ lb..40@50c.
No. 2, 90% ingots,	Tungsten, ℔ lb..... 70c.
℔ lb .....31@34c.	Ferro-tungsten, 60% 60c.
Rolled sheets ℔ lb.38c.up	Ferro-tungsten, 60% 60c.

Variations in price depend chiefly on the size of the order.

Average Monthly Prices of Metals.

In New York, for the years 1898 and 1897; in cents per pound.

Month.	COPPER.		TIN.		LEAD.		SPELTER.	
	1898.	1897.	1898.	1897	1898.	1897.	1898.	1897.
Jan	10.99	11.75	13.87	134.4	3.65	3.04	3.96	3.91
Feb.....	11.28	11.92	14.08	13.59	3.71	3 28	4.04	4.02
March ..	.....	11.80	.....	13.43	.....	3 41	.....	4.12
April....	.....	11.48	.....	13.34	.....	3 32	.....	4.13
May.....	.....	11.03	.....	13 44	.....	3.26	.....	4.21
June.....	.....	11 11	.....	13.77	.....	3.33	.....	4.24
July.....	.....	11.11	.....	13 89	.....	3.72	.....	4.32
August..	.....	11.16	.....	14.80	.....	3.84	.....	4.26
Sept.....	.....	11.30	.....	13.98	.....	4.30	.....	4.18
October..	.....	11.13	.....	13 88	.....	4.00	.....	4 17
Nov.....	.....	10 88	.....	13.79	.....	3.76	.....	4.03
Dec	.....	10.78	.....	13.71	.....	3.70	.....	3 89
Year.....	.....	11.29	.....	13.67	.....	3.58	.....	4.12

CHEMICALS AND MINERALS.

(For current prices of chemicals, minerals and rare elements see page 334.)

New York. March 11.

Heavy Chemicals.—Buying from first hands has been rather limited this week, but deliveries on standing contracts have been large. Prices are still low. The importations included 434 drums of caustic soda from Hull, England; 5 bbls. and 20 kegs of alkali from London, 60 casks of bleaching powder from Antwerp, 400 kegs of soda ash, 225 kegs of potash, 73 cases of bleaching powder, and 60 kegs of bicarb. soda from Liverpool. Receipts of domestic goods at New York during the week were 39 bbls. and 48 packages of potash, and 340 sacks of soda ash. The new plants in the Central West are progressing quietly. Quotations are $1.45@$1.50 per 100 lbs. for domestic high test caustic soda, f. o. b. works; foreign, $1.70@$1.80 delivered, according to test and quantity. Powdered caustic soda, 98 per cent., 3@3¼c. per lb., according to make and test. Alkali, domestic, 58 per cent., 50@55c. for bags, f. o. b. works; foreign, 50c. from dock, as to style of package. Carbonated soda ash, 90@95c. per 100 lbs. for 58 per cent. basis of 48 per cent. Bleaching powder, English, prime brands, $1.75@$1.90 per 100 lbs.; Continental F brands, $1.70@$1.85. Bicarb. soda, domestic, $1.40@$1.75 per 100 lbs. f. o. b. works, less the usual discounts; foreign, $1.87½@$2⅛ per 100 lbs., according to brand and style of packing. Sal Soda, domestic, 45c. per 100 lbs., f. o. b. works, less usual discounts; English, 62½@65c. Concentrated sal soda, $1.40@$1.60 per 100 lbs., f. o. b. Chlorate of potash, $8.50@$8.75 per 100 lbs.

Acids.—Demand is unchanged, while deliveries on contracts are as usual. Prices hold well. Imports of 50 casks of oxalic acid from Swansea and 30 casks of the same from Antwerp are noted this week. We quote per 100 lbs. in New York and vicinity, in lots of 50 carboys or over, as follows: Acetic acid, commercial, No. 8, $1.40 @$1.55; redistilled, 2 per cent., $2@$2.15; muriatic acid, 18 degrees, $1@$1.37½; 20 degrees, $1.10 @$1.50½; 22 degrees, $1⅛@$2, according to make and quantity. Nitric acid, 36 degrees, $3¼@$4⅛; 38 degrees, $3½@$4.40; 40 degrees, $3¾@$4.67½; 42 degrees, $4⅛@$5. Oxalic acid, $6.50@$6.75. Mixed acids, according to mixture. Sulphuric acid, 66 degrees, $1@$1.65. Chamber acid, 50 degrees, $6.50@$7.50 per ton at factory. Blue vitriol, $3.50@$3.75, according to grade and order.

Brimstone.—This market continues firm. An arrival of 1,450 tons from Girgenti is noted. Sales of best unmixed seconds have been made at $21,75, but the minimum quotation is $21.50 exship, while futures remain at $22 per ton. Thirds are from $1.25@$1.50 less per ton.

Nitrate of Soda.—The demand from powder manufacturers within the last month or so has fallen off, due probably to the large stocks of nitrate in their hands. One large firm reports that for several months past its deliveries of nitrate to gunpowder makers have aggregated 55 per cent. of the total, while the other 45 per cent. has been taken by manufacturers of chemicals and fertilizers, and partially by the glass industry. Notwithstanding light buying at present, spot nitrate continues firm, owing to the improved statistical position of the article. Hence as high as $1.80 has been quoted for spot, with $1.75 asked by one large concern. Futures are $1.50@1.52½ per 100 lbs., according to position. Arrivals of 19,688 bags are noted.

Fertilizing Chemicals.—Demand has been large from the Virginian and Maryland territory, and a fair request comes from the North. Prices appear to be strengthening in some quarters. Quotations are: Sulphate of ammonia, gas liquor, $2.47½@$2.50; bone, $2.40@$2.45 per 100 lbs. Dried blood, high grade Western, $1.77½@$1.80 per unit; New York, $1.72½@$1.75 per unit. Azotine, $1.70@$1.75 basis New York. Concentrated phosphate (30 per cent. available phosphoric acid), 57½c. per unit. Acid phosphate, 13@15 per cent., av, P_2O_5, 55@60c. per unit at sellers' works in bulk. Dissolved bone black, 17@18 per cent. P_2O_5, $16@$16.50 per ton. Acidulated fish scrap, $10@$10.50, and dried scrap $18@$18½ f. o. b. fish factory. Tankage, high grade, $15@$15½ per ton f. o. b. Chicago; concentrated tankage $1.50 per unit f. o. b. Chicago; low grade, $13@$13.50. Bone tankage, $18@$18.50; ground bone, $20@$23. Bonemeal, $1.40@$1.50 f. o. b. Chicago.

Muriate of Potash.—We quote per 100 lbs. on basis of 80 per cent. as follows: New York and Boston, $1.75 for 80 and 85 per cent., and $1.78 for 95 per cent.; Norfolk and Philadelphia, $1.76½ for 80 to 85 per cent., and $1.79½ for 95 per cent.: Charleston, Savannah, Wilmington, N. C., and New Orleans, $1.78½ for 80 and 85 per cent., and $1.81½ for 95 per cent. All for lots of 50 tons and upward.

Sulphate of Potash.—Quotations per 100 lbs., on basis of 90 per cent. are as follows: New York and Boston, $1.96½ for 90 per cent. and $2.00½ for 96 per cent.; Norfolk and Philadelphia, $1.98 for 90 per cent. and $2.02 for 96 per cent.; Charleston, Savannah, Wilmington, N. C., and New Orleans, $2 for 90 per cent., and $2.04 for 96 per cent. All for lots of 50 tons and over.

Double Manure Salt.—Prices as scheduled per 100 lbs. for 48 to 53 per cent. on basis of 48 per cent. are: New York and Boston, $1.01; Norfolk and Philadelphia, $1.02; Charleston, Savannah, Wilmington, N. C., and New Orleans, $1.03½. All for quantities over 50 tons.

Kainit.—Invoice weights, as taken at port of shipment, per ton of 2,240 lbs., testing 12.4 per cent. actual potash, equivalent to 23 per cent. sulphate of potash, $8.55 for New York and Boston; $8.90 for Norfolk, and $9.05 for Charleston, Savannah, Wilmington, N. C., and New Orleans. Actual weights, ex-vessel at port of importations are quoted $8.80, $9.15 and $9.30 respectively.

Sylvinit.—Quotations on invoice weights at port of shipment, per ton of 2,240 lbs. are per unit of sulphate of potash as follows: 36½c. for New York and Boston; 37½c. for Norfolk, and 38c. for Charleston, Savannah, Wilmington, N. C., and New Orleans. Actual weights, ex-vessel at port of importation, per ton of 2,240 lbs., per unit sulphate of potash, are 37½, 38½ and 39c. respectively.

Phosphates.—The demand from abroad for Florida phosphates continues good, and one large concern reports orders this week aggregating 15,000 tons of high grade rock, with inquiries for 7,000 tons more. The shipments in March of Florida rock from the different ports are estimated at 41,500 tons, against 37,243 tons in 1897, 37,155 tons in 1896, and 31,283 tons in 1895. The shipments from Punta Gorda in February, 1898, were 3,624 tons, against 2,181 tons in January; all by the Peace River Phosphate Mining Company, and for domestic consumption. South Carolina phosphates for both foreign and domestic use are reported in fair request, while the Mount Pleasant field in Tennessee shipped 11,240 tons of rock during February. Charters noted this week are: 1,066 tons from Fernandina to Kastrup and Aarhuus, Denmark, at 18s 6d, March sailing; 709 tons from Charlotte Harbor to Norfolk or Baltimore at $1.80; 695 tons from the same place to Baltimore at $1.80, option Alexandria, at $1.90. Quotations on Florida high-grade 75 per cent. to 80 per cent. rock, sold on guarantee of 77 per cent. iron and less than 3 per cent. alumina, are $6 to $6.50 per long ton, f. o. b. Fernandina. The freight rate to New York is about $1.90 per ton. South Carolina ground rock is worth $5.50 to $5.75 per short ton delivered in New York; undried, $3 per 2,400 lbs. f. o. b. Ashley River; dried, $3.25 to $3.45 f. o. b. same place.

Liverpool. March 1

(Special Report of Joseph P. Brunner & Co.)

The market for chemicals is rather inanimate, and the demand is disappointing.

Soda ash is inactive, but Leblanc descriptions are in small compass and rather dearer in consequence. We quote spot range for tierces as to market as follows: Leblanc ash, 48 per cent., £4 10s.@£4 15s.; 58 per cent., £4 17s. 6d.@£5 per ton, net cash. Ammonia ash, 48 per cent., £4@ £4 5s.; 58 per cent., £4 5s.@£4 10s. per ton, net cash. Bags are at 5s. per ton under price for tierces. Soda crystals are in fair request, and for most export markets £2 17s. 6d. per ton, less 5 per cent., is quoted for barrels, and 7s. less for bags. Special terms for American business. Caustic soda is less inquired for, but prices are steady, the following being the range as to market: 60 per cent., £6 5s.@£6 10s.; 70 per cent., £7 5s.@£7 10s.; 74 per cent., £8@£8 5s.; 76 per cent., £8 10s.@£8 12s. 6d. per ton, net cash.

Bleaching powder is offered at low figures for home trade requirements, but export prices are kept up at £6 5s. per ton, net cash, for hardwood casks, as to destination.

Chlorate of potash is neglected, and 3⅛d.@ 3¼d. per lb. is about nominal spot value.

Bicarb. soda is moving off at £6 15s. per ton, less 2½ per cent., for the finest quality in 1-cwt. kegs, with usual allowances for larger packages.

Sulphate of ammonia is dull at £10@£10 2s. 6d. per ton, less 2½ per cent., for good gray, 24@25 per cent. in double bags, f. o. b. here, as to quality.

Nitrate of soda is quiet at about £7 12s. 6d.@ £7 15s. per ton, less 2½ per cent., for double bags, f. o. b. here, as to quantity and quality.

Carb. ammonia, lump, 2⅞@3d. per lb.; powdered, 3⅛d.@3¼d. per lb., less 2½ per cent.

MINING STOCKS.

Complete quotations will be found on pages 330, 331 and 332 of mining stocks listed and dealt in at:

Baltimore.	New York	Mexico.
Boston.	Philadelphia.	Paris.
Cleveland.	Pittsburg.	Rossland.
Colo. Springs.	Salt Lake	Shanghai.
Denver.	San Francisco.	Toronto.
Helena.	London.	Valparaiso.
Los Angeles.		

New York. March 11.

Buying of mining stocks is limited, but inquiries are somewhat better than last week. The best prices were realized early in the week. Consolidated California & Virginia has been bid down to 70c., with the last sales quoted at 80c. Ophir has just levied its 72d assessment of 25c.

per share, delinquent March 29th; the stock sold at 50c. to-day. In the Colorado stocks there is improved demand for Leadvilles, and Small Hopes is up to 90c., with orders in brokers' hands for 1,000 shares at this figure. Lacrosse is selling at 16c., and Little Chief at 14@18c. The Gold Coin Mines Company of Central City reports a net profit for the calenendar year 1897 of $28,488. The Cripple Creek stocks are purchased in a moderate way.

Portland fluctuated from 75¼c. to 81c., and Anchoria Leland declined from 93½c. to 86c. Elkton Consolidated receded from 83⅜c. to 78c. California stocks are featureless, notwithstanding the rise in Standard Consolidated from $1.65 to $1.75, with $1.80 asked by holders. Brunswick Consolidated sold at 10@12c., with 14c. asked. The receipts of this company given in our last issue as those of January were for bullion and sulphurets delivered in December, as no ore could be extracted from the mine in January, owing to the water. The expenses during this month amounted to $2,976.

The South Dakota stock, Homestake, is quoted at $47. Deadwood Terra is up to $1.10, but buyers offer as low as 75c.

Horn Silver of Utah had bidders at $1.30@$1.35, while sellers asked $1.40@$1.45. Ontario is down to $3, with no buyers.

The Montana stock, Alice, stands at 85c. This company reports receipts from all sources of $900,129 for the year 1897, and disbursements of $888,353, leaving a balance of $11,776. Cash on hand January 1st, 1898, $25,116, against $13,340 last year. Dividends to the amount of $60,000 were paid in 1897, making a total of $1,055,000 paid to date.

There was an auction sale this week of 35 shares of the Laflin & Rand Powder Co. at 185.

Boston. March 10.

(From Our Special Correspondent.)

Liquidation in the copper share market has been quite general to-day, and although the lowest prices of the week were not recorded to-day (Monday being low day), the market closes with a very unsettled feeling and every evidence of selling lower. Long stock came out at the decline, which was general throughout the list. Calumet opened the week at $532, declined to $520 and closes at $522. Montana shows the greatest changes, from $188 to $179, and closes at $183. Butte & Boston has been conspicuously weak, selling off from $26 to $21¾, and closing at the lowest. Osceola ran off from $43¼ to $39½, and rallied to $40½. The annual meeting was held today and the old directors re-elected. President Bigelow said that the consolidation with the Kearsarge and Tamarack, Jr. companies had enabled them to increase the average value of the work 0.25% above the previous year, and also that they expected to reach the Calumet lode in the crosscut now being run in No. 6 shaft about June. He also stated that the 9,000 shares of stock in the treasury would doubtless be used later on in providing for new construction. Centennial sold at $10¾@$11, and later at $14½ (assessment of $3 paid), with final sale at $13½. Arnold has been steady at $8¾@$9¾, with last sale at the higher figure. Franklin is dull at $13@$14. Quincy has been the steadiest stock on the list at $109@$110. Wolverine is weaker, running off from $22 to $20½, with fractional rally. Tamarack yielded from $158 to $149½, with subsequent rally to $152. Atlantic holds its own about $31, although it has sold as low as $29½. Parrot has been rather quiet, but has declined from $25½ to $23, and Baltic is lower at $12¾. The low priced stocks have not been much in evidence; no sales of Tecumseh, and only a few shares of Humboldt at $1⅝@$1⅞. Allouez has shown a little activity at $1½@$2¼, with last sale at $2. Ashbed also records sales at $2½@$2¾.

The gold stocks have shown some life, but with the exception of Pioneer at prices lower than previous record. Pioneer advanced to $6¾ and closes at $5½. Merced finds a good market at $5½. Santa Ysabel sold at $6½, and declined to $6 at the close, and Gold Coins sold at $1⅞@$1½. Cochiti is lower at $6⅝, after selling early in the week at $7.

Salt Lake City. March 5.

(From Our Special Correspondent.)

Following several weks of remarkable activity, the week opened with a dead market, but on the last two days a reaction took place, sending up the volume of business.

After some selling at 30c., Ajax advanced to 36c. bid at the close, but few sales. Bullion-Beck is stronger, owing to the annual meeting to be held Monday, at which a dividend of at least 10c. per share is expected. Centennial Eureka is unchanged in price, with no business. Chloride Point has advanced, shares passing at 65½@66½c., and buyers taking futures, the offerings of which are not free. Company's new mill is ready for commission as soon as electric current is delivered; at present the only revenue is from shipments of high-grade silver ore, a lot of which on market this week carries 116 oz. Daly sold at the lowest point in its history, going at 55c., but closed 5c. stronger bid. The stock is dead unless silver rises or there is a distribution of the surplus on hand and the assets of the company.

The friends of Dexter met with a surprise in the announcement of an assessment of 15 cents per share, or $30,000, payable at once and delinquent April 4th, declared March 2d. Before the announcement the shares sold at $1.50; following it they were sold short at $1, 60 days. The money is to be applied on the floating indebtedness of the company only, and after this is discharged the company has a mortgage of $100,000 to meet July 1st, 1898. Company's situation is described in our mining news.

Galena has sold at 56@58c., as the result of a moderate demand. Management is putting good grade ore on market, and with improvements recently completed at the mines the shares have a possible earning capacity. At the Geyser-Marion annual meeting January 31st, an option for the entire stock of the company was given to George F. Downey for four months at $1.50 per share, or $450,000 for the mine. Mr. Downey returned from the East this week, and while declining to state whom he is negotiating for, he reports "everything lovely." There is a little surprise that Mr. Downey does not take advantage of the present low price of the shares (about 89c.) instead of waiting until the expiration of his option, when he must pay $1.50.

Mammoth and Mercur are both stationary, without any special feature. Northern Light is paying up its assessment, and after March 2d the shares advanced about 12c. in the bid. Heavy sales were made direct, with considerable selling of futures.

Overland was sold at 55c. by an indiscreet broker who had difficulty in delivering the stock, after which it advanced to the same figure bid and the shares held at 75c. Conditions at the mines are good. Sacramento paid its February dividend of $5,000 March 1st. The shares are in demand at an advance. Management is arranging to increase capacity of mill to approximately that of the mine. Sunbeam and Sunshine were both sellers, the latter on a limited scale. Resumption of operations on Overland and Malvern, near neighbors of Sunshine, is creating a demand for the latter security, on the belief that the company is about to start mine and mill.

San Francisco. March 5.

(From Our Special Correspondent.)

The market opened rather quietly, and with only a very moderate business, but prices were about the same as at the close last week. The quotations did not hold, however, and there was a general decline, though not a heavy one.

Business revived very slightly, but prices were weak, and dealings were confined to the old hands in the business. The public still declines to come in, and really there is nothing to induce them to take hold.

At the close the market was a little steadier, but with business light, and the effort to make a boom out of Sierra Nevada seems a complete failure. Some quotations noted are: Occidental Consolidated, $1.55; Sierra Nevada, 95c.; Consolidated California & Virginia, 81@82c. For Standard Consolidated $1.75 was asked.

The sales on regular call at the San Francisco Stock Exchange compare as follows:

	1897.	1898.
January, shares	274,280	157,360
February	166,695	151,065
Total	440,975	308,425

January and February alike were very dull months this year, in spite of the little Sierra Nevada spurt.

For the month of February, 1898, the mining, milling and other corporations on and around the Comstock paid a total of $54,666 to employes. The payments were as follows: Andes (estimated), $900; Consolidated California & Virginia, $7,336; Ophir, $1,884; Mexican, $1,564; Best & Belcher, $2,560; Gould & Curry, $1,731; Utah, $609; Occidental, $1,768; Alta, $1,514; Brunswick Lode (Shafts Nos. 1 and 2), $5,769; Crown Point (estimated), $1,500; Belcher, $2,582; Yellow Jacket, $1,811; Confidence, $242; Challenge, $242; Imperial, $382; Segregated Belcher, $240; Savage (estimated), $2,474; Chollar, $2,038; Bullion, $561; Potosi, $2,226; Union shaft, $223; Sierra Nevada, $934; Alpha, $692; Overman (estimated), $1,000; Caledonia (estimated), $500; Nevada Mill (estimated), $880; Electric Light (estimated), $500; Water Company (estimated), $3,000; quartz mills (estimated), $5,000.

Paris. Feb. 27.

(From Our Special Correspondent.)

The leading point in the mining stock market has been the strength of the copper stocks, which are maintained at very high quotations by the continued demand for the metal and its increasing price. The demand seems to keep pace fully with all increase in supplies.

The zinc and lead shares are also very strong. Vieille Montague especially showed an improvement, the cause being a report that the dividend for 1897 would be 32.50 fr. per share, or 6.50 fr. more than in 1896. Nickel shares have gone up again to 298 fr., on the strength of a statement that the Ministry of Finance is considering the question of substituting nickel for copper in the minor coins.

The metallurgical shares have been stationary, recording no advance, but losing nothing of their high values.

The market for the South African gold stocks has been very dull. Our people are tired of the too evident manipulation of the London market, and cease to pay attention to its fluctuations.

Under the law requiring all foreign securities dealt in on the Bourse to be stamped and pay a registration tax, there were registered during 1897 foreign government securities to the amount of 736,526,520 fr., while others to the amount of 786,862,522 fr. were presented for restamping under the present law. The amount of new securities of companies registered during the year was 100,219,118 fr.

The Paris Mint in 1897 turned out coinage as follows:

	Pieces.	Value. Francs.
French	34,256,977	222,523,540
Colonial and foreign	76,708,792	121,657,877
Total	110,965,769	344,481,417

Of the French coinage only 44,000 fr. was in silver and 1,400 fr. in bronze pieces, the balance being all in 20-fr. gold pieces. The colonial coinage was largely of silver dollars for Tonkin. The chief item of foreign coinage was 93,510,876 fr. in silver half-rouble pieces for Russia.

The Compagnie de Fives-Lille has received an important order for 80 locomotives for the Eastern Railroad of China. This line has a Chinese name, but it is really the eastern end of the Siberian Railroad—the short cut from Sretensk across Manchuria to Vladivostok and to Port Arthur. It is also the link which is to make Manchuria a Russian province, and open up its mineral and other resources.

We are to have railroads even in Abyssinia it seems, and a loan is offered here for the Imperial Ethiopian Railroad, which is to extend from Harrar through Abyssinia to the White Nile. The loan is for 33,350,000 fr. at 3 per cent., and the bonds of 500 fr. each are offered at 325 fr.

The colony of Madagascar is to borrow 5,500,000 fr., the loan being guaranteed by France. It is to be used to build roads and telegraphs, and make other improvements. It is a beginning only.

The foreign merchandise trade of France for the month of January is reported by the Ministry of Commerce as below:

	1897. Francs.	1898. Francs.
Imports	342,869,000	356,068,000
Exports	241,209,000	239,369,000
Excess, imports	101,660,000	116,699,000

The increase in imports was entirely in food. In exports there was an increase in manufactures, but decrease in food and raw materials.

The Klondike discoveries, which have caused excitement in London, have received very little attention here. There is gold in those hyperborean regions? Perhaps; but the risk in seeking is so great that our people are not inclined to try the venture. Our financiers are inclined to take the view which the "Engineering and Mining Journal" has so ably advocated, that the discoveries have been over-rated. No stock in Klondike companies is taken here.

Azote.

MEETINGS.

Hale & Norcross Silver Mining Company of Nevada, annual meeting, at the office, No. 331 Pine Street, San Francisco, Cal., March 16th, at 1 p. m.

South Eureka Mining Company, annual meeting, at the office, 530 California Street, San Francisco, Cal., on March 16th, at 2 p. m.

LATE NEWS.

Mr. W. B. Devereux, the well-known mining engineer and metallurgist, sails from New York to-day (March 12th) for England, on his way to do some professional work in that country, where American engineers and American methods are constantly becoming more highly appreciated.

By Telegraph.

(From Our Special Correspondent.)

Deadwood, South Dakota, March 11th.—The Deadwood and Delaware Smelting Works were destroyed by fire this morning. The fire was started about 3 a. m. by the overturning of a pot of molten slag. It is impossible to say yet how far the destruction extended and how much of the machinery can be saved, but the loss is estimated at $230,000. The insurance is $100,000. The company has already decided to rebuild on the same location, and work will be begun as soon as the ground can be cleared.

STOCK QUOTATIONS.

NEW YORK.‡

NAME OF COMPANY.	Location.	Par val.	Mar 5. H.	Mar 5. L.	Mar. 7. H.	Mar. 7. L.	Mar. 8. H.	Mar. 8. L.	Mar. 9 H.	Mar. 9 L.	Mar. 10. H.	Mar. 10. L.	Mar. 11. H.	Mar. 11. L.	Sales
Alamo	Colo.	1	.03	.02½	02¼	.....	.03	02½	.02⅜	.....	.02⅜	02½	.02⅜	.02¼	19,000
*Albany	Cal.	1	.04	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Alice	Mont.	25	.....	.....	.....	.....	.....	.....	.85	.....	.....	.....	.....	.....	2 0
American Flag	Colo.	1	.19	.18	.17	.....	.17	.....	.17	.16½	16⅝	.....	.....	.....	4,700
Anaconda Gold	"	5	.34	.....	40	.33	.37	.....	.45	.....	.40	.36	.37½	37½	6,300
Anchoria-Lel	"	1	.....	.....	93½	.93	.....	.....	.85	.....	.89	.....	.....	.....	3,000
Argentum-Jun	"	5	.22	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	500
Belcher	Nev.	100	.....	.....	.....	.....	.....	.....	.....	.....	.....	.28	.....	.....	100
*Best & Belcher	"	100	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	300
Breece	Colo.	25	.....	.....	.....	.....	.40	.....	.....	.....	.....	.....	.....	.....	100
Brunswick	Cal.	1	.2	.11	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	600
Cannon Ball	Colo.	1	.....	.....	.0145	.....	.....	.....	.....	.....	.0041	004	.004	.0037	42,000
*Catalpa	"	10	.07	.....	.....	.....	07	.....	.07	.....	.....	.07	.....	.....	.....
*Comstock T	Nev	10	.14	.03	04	.03	04	.03	.....	.01	.04	.03	.....	.....	.....
Com T. bonds	"	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Con. Cal. & Va	"	100	.80	.....	85	.....	.....	.....	.....	.....	.80	.....	.....	.....	550
Con. Imperial	"	100	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Creede & C. C	Colo.	1	.....	.....	.....	.....	.....	.....	.04	.....	.....	.....	.....	.....	1,000
Cripple Cr. Con	"	1	.11	.....	10⅜	.10¼	.10	09⅝	09¼	09	.09⅜	.....	.09	.....	19,500
Crescent	"	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
*Crown Point	Nev.	100	.18	.12	.18	.12	.10	.....	.18	.12	.....	.10	..	.....	.....
*Deadw'd Terra	S.Dak	25	1.10	.....	1.10	.....	1 10	.....	1 10	.....	1 15	.....	.....	.....	600
Elkton Con	Colo.	1	.83½	83¼	84	.83½	83⅛	.79½	.78¼	.78	.....	.....	77¼	.77	3,700
Father De smet	S.Dak	100	.22	.16	.22	.16	.22	.18	.22	.16	.....	.....	.....	.....	.....
Garfield Gr'se	Colo.	1	05¼	.....	.....	.....	.....	.....	06¼	.....	.....	.....	.06⅜	(6¼	20,500
Golden Fleece	"	1	.45	.44	.45	.43	.45	.....	.43	.....	.46	.....	.46⅝	46	6,900
Gold. San Juan	"	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Gold Coin	"	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Gold Magnet	"	1	.....	.....	0047	004	0047	.....	.006	0 5	.007	.0055	.006	0057	90,000
*Gould& Curry	Nev.	100	.23	.15	23	.....	.....	.....	15	.....	.....	.....	.20	.....	1,300
*Hale&Norcross	"	100	1 25	.....	1 25	.....	1.25	.....	1.25	.....	.....	1.25	.....	.....	.....
Homestake	S.Dak	100	.....	.....	47 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	10
*Horn Silver	Utah.	25	1 45	1 30	1 4	30	1.45	1 30	1 40	1 35	1 45	1 35	.....	.....	.....
*Iron Silver	Colo.	20	.50	40	.50	40	.50	40	.50	40	.50	.40	.....	.....	.....
Isabella	"	1	24½	24½	.23	.....	.....	.....	.20½	19¾	.....	.....	.21¾	.21	17,600
Jefferson	"	1	03½	.....	05¼	.05	.04½	.....	.04¾	04¼	.05¼	.04	.....	.....	9,000
Justine	"	1	.06¼	04	06	04	05⅝	.04¼	06	04½	04¾	.04	.03¾	03⅝	79,100
*King & Pemb	Ont.	10	.22	17	.22	.7	21	.17	2	.17	21	.17	.....	.....	.....
Lacrosse	Colo.	10	.16	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	100
Lillie	"	1	.....	.....	74½	.....	.....	.....	75½	.....	.75	.....	.74½	.74	2,800
*Little Chief	"	50	.14	.....	.....	.....	.18	.14	.....	.14	.18	.14	.....	.....	.....
*Mexican	Nev.	100	.3	.....	.....	.....	.28	.....	.3	.....	.....	.28	.....	.....	.....
*Miami	Colo.	1	.....	.39	.....	.19	.....	39	.....	.39	.39	.....	.....	.....	.....
Mollie Gibson	"	5	.24	.20	20	.....	.....	.....	20¼	.....	.....	.....	.21	.2	8,500
Mt. Rosa	"	1	12⅜	.....	.13	12½	12⅜	.....	13¼	.....	.....	.....	12¾	12½	12,000
Old Gold	"	11	.....	.....	.05	.....	.047	.....	.0 45	.....	.....	.....	.005	.....	3,000
Ontario	Utah.	100	.....	.....	.....	.....	3 00	.....	.....	.....	.....	.....	.....	.....	30
Ophir	Nev	100	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.59	.....	300
Pharmacist	Colo	1	.....	.....	.....	.....	.06	.....	.06	.....	.....	.....	.....	.....	1,000
Phœnix Con	Ariz.	100	.08	.07	08	.07	.08	.06	.06	07	.....	.....	.....	.....	.....
Pilgrim	Colo.	1	.045	.....	0145	.....	.....	.....	.005	.....	.....	.....	.....	.....	10,500
*Plymouth	Cal.	10	.....	08	.....	.....	.....	.....	.....	.08	.....	.....	.....	.....	5,500
Portland	Colo.	1	.78	.75½	.77	.76½	.76	.....	.....	.....	.....	.81	.77½	.75⅝	.75	.....
Potosi	Nev.	100	20	.....	22	.....	21	.....	.....	.....	.....	.37	.32	.....	.....	1,600
*Quicksilver	Cal.	100	2.00	1.25	2.0	1 00	2 00	1 25	.....	.....	.....	.....	.....	.....	.....
" do. pref	"	100	7.00	3.00	7 0	3.00	7 00	3.00	.....	.....	.....	.....	.....	.....	.....
Rocky Mtn	Colo.	1	.....	.....	.10	.....	.....	.....	.....	.....	.....	.....	.....	.....	200
Savage	"	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	27	.....	100
st. F. Cariboo	B.Col.	5	2.75	2 63	.....	.....	2 75	2.63	.....	.....	.....	.....	2 75	2 63	960
Sentinel	Colo.	1	.0059	.006	.008	.0 65	0085	006	.006	.0047	008	.0051	0085	007	513000
*Sierra Nevada	Nev.	100	.....	85	.....	.....	1.10	.90	.....	.85	1.10	.93	.....	.....	.....
Small Hopes	Colo.	20	.....	.....	.....	.....	.....	.....	.....	.....	99	.....	.....	.....	500
Specimen	"	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Standard Con	Cal.	100	.....	.....	.....	.....	.....	.....	1.75	1 70	1.75	1.10	.....	.....	300
Syndicate	"	100	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Tamarack	Colo.	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.05	.....	2,000
Union	"	1	12⅜	.....	.13	12½	11⅜	.....	10⅜	.....	11	10⅜	10⅜	10¼	26,200
*Union Con	Nev.	100	.....	.25	.....	25	.....	.39	.....	.25	.....	30	.....	.....	.....
Utah Con	"	100	.....	.....	.....	.....	.....	.....	.....	.....	.30	.....	.....	.....	2,000
Waldorf	Colo.	1	.08	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	(6,000
Work	"	1	.03	.....	.02¼	.....	.02⅜	.....	.02¼	.02	.02⅜	.02¼	.02	.....	23,500
Yellow Jacket	Nev.	100	.....	.....	.24	.....	.....	.....	.28	.....	.30	.....	.....	.....	1,500
Yukon	Can.	1	.....	.....	.11¾	.....	.11⅜	.....	.11¼	.11	.11⅜	.....	.12	.....	5,100

COAL AND INDUSTRIAL STOCKS.

*AmericanCoal	Md.	25	140	120	140	118	140	118	140	120	140	120			
Central of N. J	N. J	100	93¾	92	92	90	92½	91⅝	93¼	92½	92¼	91¼	90¼	...	8,510
*Sol. C. & I. Dev	Colo.	100	1	¼	1	⅛	1	⅛	1	¼	1	¼	.....	.....	.....
Col. Fuel & I	"	100	20¾	20	19½	17¾	19½	.....	20	.....	.....	.....	.....	.....	550
Col.& H C.& I	Ohio.	100	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	5⅜	...	400
*Con. Coal	Md.	100	.....	41	.....	41	.....	41	.....	40	.....	41	.....	.....	.....
Del. & Hud	N. Y	100	110	109¾	109	08⅜	110	.....	.....	.....	110	109¾	09	...	2,986
Edison E.I.of B	"	100	06¾	..	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	100
do. E.I.of N.Y	"	100	.....	.....	.....	.....	130	.....	.....	.....	.....	.....	.....	.....	10
General Elec	"	100	32⅛	31⅜	31⅛	30⅝	32¼	31⅜	32½	32	33¼	31⅝	31	.....	9,025
Illinois Steel	Ill	100	47	.....	45⅜	.....	45	.....	.....	.....	45	.....	47	.....	625
*Maryland C.pr	Md.	100	3	42	52	40	52	40	53	42	53	42	.....	.....	.....
Minnesota Ir	Minn.	100	62¼	60¾	60	.....	60	.....	62	.....	.....	.....	61¾	.....	2,726
National Lead	N. J.	100	31⅝	31	31	29⅝	31⅝	.....	31½	.....	31	30¼	29¾	.....	2,820
*New Central C	Md.	100	8	7	8	7	8	7	8	7	8	7	.....	.....	.....
N. Y., Ont. & W	N. Y.	100	15¾	15¼	15	14¾	14¾	14¾	14¾	14¾	15	14¾	14½	.....	8,7 3
N.Y., S.& W.prf.	"	100	.....	.....	28¼	.....	31	29¼	.....	.....	30	.....	44¼	.....	1,000
Oregon Imp	Ore.	100	.....	.....	.....	24	25⅝	.....	25⅜	25	.....	.....	.....	.....	1,200
*Penns'lv'nia C.	Pa.	100	.....	341	.....	325	.....	330	.....	340	.....	330	.....	.....	.....
Phila. & Read	"	100	18½	18⅜	19	17¼	18¼	17⅜	18⅛	18	18	17¾	16¾	...	15,534
" " 1st pf.	"	100	42¾	4 ⅛	41	40	4 ⅛	40⅜	41¼	40⅞	41⅝	41	.....	...	17,074
†Standard Oil	.....	100	376	374	362	361	368	366	368	366	364	363	.....	.....	.....
Tenn.C.,I.&R.R.	Ala.	100	21½	21	20	19¼	20¼	20	20½	.....	20½	19⅜	18¼	.....	5,59
*Worth P.,pref.	N. Y.	100	90	87	90	87	90	87	90	87	90	87	.....	.....	.....

‡Official quotations. New York Stock Exchange, mining, 40 shares; other stocks, 76,808 shares; Consolidated Stock and Petroleum Exchange, mining, 18,850 shares; Mining Exchange, 1,595,360 shares. Total shares sold, 1,691,058 *Bid and ask quotations. †Ex-dividend.

PHILADELPHIA, PA.†

NAME OF COMPANY.	L'cation.	Par Val'e	Mar. 3 H.	Mar. 3 L.	Mar. 4. H.	Mar. 4. L.	Mar. 5. H.	Mar. 5. L.	Mar. 7. H.	Mar. 7. L.	Mar. 8 H.	Mar. 8 L.	Mar 9 H.	Mar 9 L.	Sales
Cambria Iron	Pa.	50	37 13	37 0	37.13	37 0	.....	.....	37 00	.....	37 00	.....	.....	.....	445
Choctaw. pref.	I T.	50	30 50	30 25	30 50	30.00	.....	.....	29 50	29.00	29 75	29 25	29 88	29.75	1,635
Hunt & Br.Top	Pa.	50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
" pref	"	50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Lehigh Nav	"	50	41 25	40 00	39 75	.....	40 00	.....	40 00	.....	40 25	.....	40.00	.....	3 7
" Val	"	50	22 25	22 00	22.50	22 00	22 00	.....	21 50	20 53	21 75	20 75	21 50	21 13	1,733
Penna. R. R	"	.....	58 50	58 13	58.50	57 75	58 00	.....	57.25	57.00	57 50	57 13	57.50	57 25	4,246
*Pa.S'ltMfg.Co	"	50	.....	106	.....	106	.....	106	.....	.....	.....	.....	.....	106½	.....
Penna. Steel	"	100	.....	.....	.....	.....	.....	.....	.....	.....	10.00	9 00	.....	.....	150
" pref.	"	100	.....	20 00	18 50	22 00	.....	.....	.....	.....	.....	.....	.....	.....	155
United Gas Im	Can.	.....	114¾	112	111⅝	110⅝	110¾	110¼	108¾	106	110¼	109	111	109¼	15,103
Welsb.of Can	"	5	.....	.....	1.38	.....	.....	.....	.....	.....	1.38	.....	1 38	.....	460
Welsb.Com'l	Pa.	100	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	10 50	...	25
" Com.pr	"	100	50†	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	25
" Light	"	10	39 00	38 00	38 00	.....	37 50	.....	.....	.....	.....	.....	41 88	38.00	1,576
* West. Coal	"	50	.....	50.00	.....	50 00	.....	50 00	.....	.....	.....	50.00	.....	50.00	.....

†Official quotations Philadelphia Stock Exchange. *Bid and ask quotations. ‡ Ex-dividend. Total shares,[25,410.

PITTSBURG, PA.* Mar. 9.

NAME OF COMPANY.	Location.	Par val	Bid.	Ask.	NAME OF COMPANY.	Location.	Par val	Bid.	Ask.
Allegheny	Pa.	$100	46½	50	N.Y. & C. Gas Company	Pa.	$50	.....	.....
Carborundum	"	100	.....	.....	Peoples' Natural Gas	"	50	.....	.....
Chartiers Valley	"	100	.....	12	Peoples' Pipeage	"	25	.....	.....
Enterprise Mining	Colo.	5	.....	.....	Pennsylvania Gas	"	50	.....	.....
Lustre Mining	Mex.	10	12¾	.....	Philadelphia Gas	"	50	31¾	32
Mansfield Coal	Pa.	50	.....	.....	Silverton Mining	Colo.	10	.....	.....
Manufact. Gas	"	50	.....	.....	Wheeling Gas	W.V.	50	2	25

BOSTON, MASS.‡

NAME OF COMPANY.	Par val.	No. of shares.	Mar. 4. H.	Mar. 4. L.	Mar. 5. H.	Mar. 5. L.	Mar. 7. H.	Mar. 7. L.	Mar. 8. H.	Mar. 8. L.	Mar. 9. H.	Mar. 9. L.	Mar. 10. H.	Mar. 10. L.	Sales
Ætna Con.	5	10,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Allouez, c	25	80,000	2.00	1.75	1.50	1.38	1 68	1.50	.....	.....	2.00	1.75	2 25	1.88	2,585
Anaconda, C	25	1,200,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Arnold, c	25	40,000	10 00	9.25	9.00	.....	8 75	.....	9.75	9.25	9.75	.....	.....	.....	566
Ash Bed Mg	25	40,000	2.50	.....	.....	.....	2.75	.....	2.50	.....	.....	.....	.....	.....	425
Atlantic, c	25	40,000	.....	.....	31.00	.....	30 50	29.50	31 50	30.25	23 25	30.50	.....	.....	1,383
Baltic Mg	25	100,000	14 25	13.00	13 00	12.75	13.50	12 00	13 00	12 75	12.75	.....	13 50	13.00	2,482
Bonanza	10	300,000	.....	.....	.....	.....	.....	.....	.50	.....	.....	.....	.....	.....	300
Bost. & C.C., g	1	200,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Bost.&Mont,gsc	25	150,000	189	186½	187¼	184½	183	179	186	183	188	185¼	186	182½	11,184
Breece (Iron)	25	200,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Butte & Bost., c	25	200,000	26 00	24.50	24 50	24 00	23 00	21.63	24 00	23 75	23.50	23.00	23 00	21.75	19,043
Cal. & Hecla, c	25	100,000	532	531	.....	.....	521	.....	525	52)	521	.....	.....	.....	55
Catalpa, s l	10	30,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Centennial, s	25	80,000	14 50	10 00	14 75	14 00	14.25	14.00	14 50	14 13	14.25	.....	14 50	13.50	7,447
Copper Falls	25	40,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Crescent	10	300,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Dominion Coal	100	15),000	20 25	17.25	18.25	18.00	19.00	16 00	17.75	17 25	18.00	17.50	.....	.....	6,105
do. pref	100	30,000	107½	.....	.....	.....	.....	.....	105¼	105	105¼	.....	.....	.....	265
Franklin, c	25	42,000	14 75	.....	14.00	.....	13 00	13 75	.....	.....	13 88	.....	.....	.....	240
Gold Coin, g	5	200,000	.....	.....	1.88	.....	1.50	.....	.....	.....	.....	.....	.....	.....	300
Humboldt, c	25	40,000	1 88	.....	1 63	.....	.....	.....	.....	.....	.....	.....	.....	.....	350
Illinois Steel	100	186,500	48 00	.....	.....	.....	46 00	45.00	49 00	.....	.....	.....	.....	.....	837
Lake Sup. Iron	25	84,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Merced, g	15	100,000	.....	.....	.....	.....	.....	.50	.....	.....	.....	.....	.....	.....	200
*Napa Con., q	7	100,000	8.00	7.00	8.00	7 00	8 00	7 00	8 00	7.00	.....	.....	.....	.....	.....
National	25	40,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Old Dominion,c	25	150,000	30 75	29 25	29 25	27.75	27 00	24 00	28 38	27.25	28 50	27 75	28.00	26.50	20,851
Osceola, c	25	50,000	43 50	42.13	42 50	42 00	41 25	39 50	42 50	41 25	42 25	42.00	42.00	40.50	2,283
Parrot Mg	10	200,000	25 50	24 00	24 00	22.75	23 13	23.00	23.25	23.00	23.25	23.00	23.50	23.00	3,379
Pioneer, g	10	100,000	5 13	.....	.....	.....	.....	.....	5.75	5.63	.....	.....	5.50	.....	420
Quincy, c	25	100,000	110¾	.....	110½	110	110	.....	.....	.....	110	109	110	109	331
San. Ysabel, g	5	100,000	.....	.....	6.50	6.00	6 00	.....	.....	.....	.....	.....	6.00	.....	190
" " rgts.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Tamarack, c	25	60,000	158	155	155	153	152	149½	152	151	154	152	.....	.....	701
*Tecumseh, c	25	40,000	3 00	2 50	3 00	2.50	3.50	2.50	3 50	2.50	.....	.....	.....	.....	.....
Wolverine, c	25	60,000	24 00	21 75	21 50	20.50	20 75	20 00	21.00	20.50	21.00	.....	21.00	20 50	2,205

‡ Official quotations Boston Stock Exchange. * Bid and ask quotations
Total sales, 77,628.

BALTIMORE, MD.* Mar. 9.

NAME OF COMPANY.	Location.	Par value	Bid.	Ask.	NAME OF COMPANY.	Location.	Par value.	Bid.	Ask.
Atlantic Coal	Md.	$10	.....	.....	Howard C.&C	Md.	$5	.....	.....
Big Vein Coal	"	10	.....	.....	Newburg Orrel C.	"	25	.....	.....
Consolidation Coal	"	100	41	.....	Silver Valley	N. C.	5	.....	.....
Georges Creek Coal	"	100	111	115	.....	.....	.....	.....	.....

*Official quotations Baltimore Stock Exchange.

CLEVELAND, O.*

NAME OF COMPANY.	Par value.	Mar 9 Bid.	Mar 9 Ask.	NAME OF COMPANY.	Par value.	Mar. 9 Bid.	Mar. 9 Ask.
Aurora	$25	.....	$4	Lake Superior	$25	$21.0	.....
Chandler	25	$38	40	Minnesota	100	63	$64
Cleveland-Cliffs	100	36	38	Pittsburg & L'ke Angeline	25	85	.....
Jackson	25	.....	.....	Republic	25	10¾	11.50

*From our special correspondent.

COLORADO SPRINGS, COLO.‡

NAME OF COMPANY.	Par val	Feb. 28. B.	Feb. 28. A.	Mar. 1. B.	Mar. 1. A.	Mar 2. B.	Mar 2. A.	Mar 3 B.	Mar 3 A.	Mar 4. B.	Mar 4. A.	Mar 5. B.	Mar 5. A.	Sales.
Alamo	$1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Anaconda	5	.....	.....	38	.....	.....	.....	.38	.....	.30	.....	.....	.....	355
Arg'ntumJ	2	.....	.....	.19¾	.19¾	.....	.....	.....	.....	.....	.....	.....	.....	1,900
Bob Lee	1	.....	.....	.003	.....	.003	.....	.003	.....	.....	.....	.....	.....	5,000
Cr. & C. C	1	.03¾	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2,000
C. C. Con	1	.10¾	.10¾	.10¾	11	.10⅜	10¾	.10⅝	.....	.....	.....	.....	.....	23,500
Des Moines	1	.....	.....	.01¾	.....	.....	.....	.....	.....	.....	.....	.....	.....	2,000
ElktonCon	1	.76¼	.76⅛	76⅛	.77¼	.72½	83	82	.82¼	83	.83½	.83¾	.83¾	76,000
El Paso G	1	.08¼	09¾	.....	.....	.08¾	09	.09	.09¼	.08¼	09	.....	.....	30,331
Fanny R	1	.20	.21	.21	.21½	.22½	.23¾	.23	.24	.....	.....	.....	.....	11,350
Favorite	1	.....	.....	.....	.....	.....	.....	.....	.....	.02	.....	.....	.....	500
Findley	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Franklin	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
G'ld crater	1	.....	.....	.....	.....	.....	.....	.....	.....	1.00	.....	.....	.....	50
G'd'n Fl'ce	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Gold & Gl	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hayden	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	003½	.....	3,000
Ing. Con	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Isabella	1	.25⅝	25¾	25¾	.....	.21½	.25¾	.21⅜	.25½	.24½	25⅜	.22	.23⅝	37,200
" Stamp	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	03⅜	.....	2,000
Jack Pot	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	7,900
Lillie	1	.74¾	.75	.74⅜	75	.74½	74¼	.....	.....	.74½	.75	.74¾	.....	2,000
Magnet R	1	.0.9	.....	.....	.....	.009	.....	.....	.....	.....	.....	.....	.....	12,500
Matoa	1	13⅜	13⅞	13⅝	13¾	13¾	.....	13¾	.....	3⅜	.....	.....	.....	17,700
Mollie G	1	.2.5⅜	.....	.20½	20¾	.20¾	.....	.21	.....	.....	.....	20½	20¾	9,280
Moon-A'c'r	1	.97⅜	.97½	97	.97½	97½	.....	.97½	97¾	.97½	9⅜	.....	.....	100
Mt. Rosa	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.13	.....	.....
NewHaven	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Oriole	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Pharmacist	1	.06	.....	.06¼	.....	.06	.....	.....	.....	.....	.....	.....	.....	2,000
Pilgrim C	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.02	.....	2,000
Portland	1	77⅜	78	77⅜	.....	.77½	.....	.76½	77	.76	.....	.....	.....	5,400
Sliver

STOCK QUOTATIONS.

DENVER, COLO.‡

NAME OF COMPANY.	Par val.	Feb. 28. B.	Feb. 28. A.	Mar. 1. B.	Mar. 1. A.	Mar. 2. B.	Mar. 2. A.	Mar. 3. B.	Mar. 3. A.	Mar. 4 B.	Mar. 4 A.	Mar. 5. B.	Mar. 5. A.	Sales
Mines:														
Anac'da G.	$5	.38	42	.38	42	.38	.40	.39	.41	35	.....	35	.....	1,500
Anchoria-L	1	.....	1.00	.65	.92	.88	.93	.83½	.9[illegible]	.90	95	91	.66	100
Arcadia C..	1	01	.....	01½	.01¾	02	.....	.01¾	.02	.01¾	.01¾	01¼	.....	.....
Arg. Jun.	2	.18½	.21	.19	.20	.18	.....	.19	.20½	.18½	.19	.18½	.....	6,000
Aspen D M.	1	.01¾	.02½	.01¾	.02¾	.01¾	.02½	.01	.03	.01	.....	.01¾	.02½	.....
Bangkok....	1	.0 8	.....	.01	.....	.01½	.....	.01	.02	.01	.....	.01¾	.....	.....
Bankers...	1	.07¾	.08½	.07¾	.08½	.07	.08	.07	.07½	.06	.....	.06	.....	22,000
Big Six....	1	12	.16	.....	.14	.07	.....	.11	.16	.11	.16	.....	.....	.....
C. C. Con..	1	.....	.11	.10	.....	.10¾	.....	.10¾	.11	10½	.11	.10	.10¾	2,000
Della S.....	1	05½	.....	.05	.....	.05	.....	.04	.....	.....	.....	.....	.....	.....
ElktonCon	1	.75¾	.....	.76	.77	76¾	.....	.80	82	.83	.85	82½	.....	4,000
El Paso G..	1	.....	.....	.....	.10	08	.....	09	09¾	.8[illegible]	.10	.8[illegible]	09¼	[illegible]
Enterprise..	1	03	.....	.....	.....	.....	.01¾	13½	.04½	.02¾	.....	.63¾	04½	.....
FannyRaw.	1	.....	.....	.21	.22	.20¾	.....	.20	.24	.20	.25	.....	.22	1,000
Garf. Gr....	1	.06¾	.07¾	.....	.06¾	.....	.06½	.07	.06¾	.....	.06	.....	.06¾	12,400
Gilpin &C.C	1	.16	16½	.15¾	16	.16¾	.18	17	.18	.17¾	.18	.17¾	18	16,500
Gold Coin .	1	.....	1.00	.90	.....	90	.95	.80	92	85	.95	.....	.....	.....
Gold. E (L.)	1	20	.50	.15	.....	.....	.....	.....	.28	16	.....	.17	.....	.....
G. Fleece .	1	.45	.....	.44	.....	.44	.48	.45	.50	.45	.....	43	.51	3,000
Gold & G'be	1	.....	.....	01¾	.....	01¾	.....	.02	.....	.01¾	.....	0.¾	.03	.....
Iowa	1	.....	.....	.25	.....	.25	.....	20	.....	.....	30	.....	.36	.....
Iron Clad.	1	01½	.02	.01¾	.02	01½	02	.01¾	.02	01¾	.02	01¾	.02½	37,000
Isabella....	1	25½	.....	.25	.26	.25	.....	25¾	.26½	.24¾	.25	.....	.22¾	14,600
Jack Pot....	1	.....	.....	03½	.04	03¾	.04	03¾	.....	.03	.....	.03¾	.04	1,000
Jefferson..	1	.04½	.07	04½	.....	.04¾	.06	04¾	.....	.03	.....	.04	.....	.....
Keystone...	1	.04	.....	.....	.04¾	.04	05	.04¾	.04¾	.04¾	.05	.....	.....	1,000
Lillie.....	1	.....	.....	.74	.75	.60	.....	73	.75	.50	.....	.74	.75	100
Matoa.....	1	13¾	.14	13¾	.14	13¾	.....	13¾	.13¾	13¾	.14	.....	.....	.....
Mineral R..	1	.06¾	.08	.06¾	.07¾	06	.07½	.06	.....	01	.....	.....	.....	.....
Mollie Gib .	5	.19	.22	.19¾	.....	.19	.....	.18	.23	.20	.22	.....	.....	.....
Moon-A.....	1	.95	1.00	96	.98	.95	.98	.....	.97¾	97	98	97¾	93¾	4.0
Mt. Rosa....	1	.12	.13	.....	.....	.12¾	.14	.12¾	13¾	.12¾	.13¾	.....	.....	.....
N. Zealand.	1	03½	.06¾	03¾	06¾	05¾	.....	05	.16¾	.05	.06½	05	.06¾	.....
Nugget.....	1	03	06	.03	.06	.04	.06	.04¾	.03½	03¾	.....	.....	.....	.....
Ophir.....	1	10	.13	.10	11	09¾	11	10	15	.10	12	.05	.....	500
Peoples	1	01¾	02	01¾	.01¾	01¾	01¾	01¾	01¾	.06	.....	01¾	.....	.....
Pharmacist	1	.05¾	06¾	.06	.....	.06	.07	06	06¾	.05¾	.....	.04	.....	.....
Portland..	1	.72	.....	.75	.79	.75	.....	76¾	77¾	.75	.78	.74½	.....	.....
Prince Alb	1	.0 ½	.03	.01	.03	01	.03	01¾	.03	.01½	.....	.01	.03	.....
Sacram'nto	1	02½	0.¾	.02¾	03¾	.02¾	.....	02¾	03¼	.02½	.....	01¾	03¼	8,000
Smuggler.	1	.30	.....	30	.....	30	.50	.....	.....	.10	.....	.09	.....	.....
Specimen..	1	03¼	.01¾	.03	.....	.03	.04	.03	.03¾	.03	.....	.....	.....	.....
Squaw Mt.	1	008	010	.0085	.01	000	.0105	008	.01	.008	.....	008	.010	.....
Union Gold	1	.12	.13	.12½	13½	.12	.13	12½	13	.12	.13	.11	.13	.....
Union Le's	1	.01	.....	01¾	.....	.02½	.....	.01	.....	.....	.....	.....	.....	.....
Va. M. ..	1	02¾	.03¾	.02¾	03	.02¾	02¾	02¾	.02¾	.02¾	03¾	.02¾	03	12,000
Work.....	1	02½	.03½	.03¾	.03¾	.03¾	03¾	.....	.03¾	.....	.03½	.01	.....	3,000
Prosp'cts:														
Ætna	1	.02¾	.003	.002	003	.002	.003	002	.....	002	003	.002½	.002¾	.....
Ben Hur....	1	.003¼	.....	.02¾	.02¾	.02¾	03¾	.02	.....	02	.....	02	02¾	.....
Bob Lee .	1	.003¼	.0035	.003	.....	.003	.0035	.003	.003¼	.002¾	.....	.003	.003¼	$ 69,000
Bcst.-Idaho	1	.01	.....	0.0	.....	.010	.....	.010	.....	01	.....	.010	.....	.....
C. C. Imp...	1	.001¾	.....	.001¾	.002	.001¾	.....	.001¼	.001¾	.001¾	.0015	.001¼	.002¾	.....
Copper Mt	1	.01¾	02	.01¾	.02	.01¾	02	01¾	.01¾	01	.....	.01	.....	.....
Cr. & C. C .	1	03¾	.05	.03¾	.....	.03¼	.04¾	.02¾	.....	.02½	.....	.02	.....	.....
Eclipse . .	1	001	.001½	.001	.0015	.0.15	002	.0015	002	001	.002	.....	.....	.....
Findley ...	1	01¾	.....	.....	.13¾	01¼	.....	01¾	02	01	.01¾	.01¾	.01¾	.....
Franklin...	1	004	.006	.004	005	.0 4	.0055	.0 5¾	.006	.001¼	0.45	.0 3¾	0.4¾	.....
Gene Field.	1	002	.002¾	.002¾	.0025	.002¾	.0025	002	.0025	.002¾	.....	.002	.....	57,000
Geo Wash ..	1	.001¾	.....	.004¾	005	.004	.005	.004¾	.....	.004¾	.....	.0035	.....	1 0 0
Gilpin Four	1	0 8	009	.007¾	.0.8¾	.008¾	.009¼	0.8	.0 8¾	.007¾	.008¾	0 75	.01	48,000
Gregory L	1	009	.01	009	.010	008	.010	.008	.009¼	.008	.009	.008	01	3,500
Illinois	1	0035	.0.6¾	.005¼	.006¾	.005	.0065	.0 4	.006¾	.0055	.....	.0.5¾	.....	4,000
Insley.....	1	002	.....	002	.0025	002	.004	.002	.....	.001¾	.0015	.001	.....	1,000
Kaffirs.....	1	.002	.....	002	.....	.002	.....	.....	.....	002	.....	.....	.....	.....
Magnet R..	1	.0095	.012	.009	.0105	.....	.0.2	.008	01	009	.0105	008	.010	.....
New Haven	1	01	.....	.....	013¾	.01	.....	010	.....	.008	.....	.008	.....	.....
Old Gold..	1	.05	.0.5¾	.005¾	.005¾	05	.005¼	004¾	0.55	.0045	.005	004	005	3,000
Pilgrim C..	1	0.3¾	.0.3¾	0.3¾	.003¾	.003	.....	.003	.0.3	.003	.003¾	.003¾	.003¾	5,000
Pine C.Con	1	.004¾	.0 45	.304	004¼	003¾	004¾	.0034	.....	.0035	.....	0 35	.....	51,000
Puritan....	1	002¾	.002¾	002¾	.0025	002	.....	.0025	.....	.0025	.0035	.0025	002¾	.....
Reno.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Republic ..	1	.....	.....	.02¾	02¾	03	04	02	.....	02¾	03¾	02	.....	.....
Tamarack..	1	007	.007¾	.006¾	.....	006¾	007¼	006	.007	.0065	006¾	0 6	006¾	33,000
Trachyte..	1	01	.....	01¾	01¾	01¼	.02	.....	.....	.01¼	.01¾	01	.....	.....
Wn. of F. C	1	003¼	.0035	.003	.0035	.003	.....	.003	.....	003	.0035	.002¾	003¼	27,000
Wire Gold..	1	.0045	.....	.....	.....	.005	.....	.004	.....	.004	.....	.....	.....	.....
.....	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

‡Official Quotations Denver Stock Exchange. Sales: Mines, 141,731 shares; prospects, 306,500 shares; grand total, 448,281 shares.

HELENA, MONT.* Week ending Mar. 4.

NAME OF COMPANY.	Location.	Company's office.	Par value.	Bid.	Asked.	Shares sold.	Price.
Am.Dev.&M.Co.	Idaho & Mont.	St. Paul, Minn., &Gib'ville,Id.	$5	.....	$1.00	.....	.....
Bald Butte.....	L. & Cl'ke Co.	Helena, Mont.	1	$2 00	2 50	550	$2.00
Bi-Metallic.....	Granite "	St. Louis, Mo.	5	.....	.....	.....	.....
Con.T.&P'rm'n.	Cœur d'Alene,Id	Burke, Id.	5	.50	.60	1,000	.45
Gold Mountain.	Ruby, Mont.	....	.....	1.15	1.25	15,000	.....
Helena & Frisco	Cœur d'Alene	London.	5	7 00	7 50	400	8 00
Iron Mountain.	Missoula, Mont	Helena, Mont.	5	.....	.....	.....	.....
Judge.....	Meagher Co."	" "	.....	.8	.10	116,000	.....
Merrill (Gold)..	Jefferson "	Butte "	1	.....	.....	.....	.....
Ontario.....	DeerLodge "	Helena "	1	.....	.....	.....	.....
Yellowstone....	Meagher "	" "	5	.05	.03¼	7 500	.5 to .07

* Special Report of Samuel K. Davis. Total shares sold, 2,600.

SAN FRANCISCO, CAL.*

NAME OF COMPANY.	Location.	Par. value.	Mar. 4.	Mar 5.	Mar. 7.	Mar. 8	Mar. 9	Mar. 10.
Alpha Con.	Nev.	100	.15	.14	.08	08	.08	.08
Alta.....	"	100	15	.14	.15	.15	.15	.15
Andes	"	100	08	08	09	09	.09	.10
Belcher.....	"	100	21	.22	.23	25	.24	.24
Best & Belcher...	"	100	.33	33	.30	.32	.31	.31
Bullion.....	"	100	.07	.07	.	08	.09	09
Caledonia	"	100	.....	28	.28	28	.28	.28
Challenge.....	"	100	.27	27	.25	26	.28	.26
Choliar.....	"	100	34	.35	34	36	36	.36
Confidence.....	"	100	.65	.67	....	.67	.67	65
Con. California & Virginia..	"	100	.80	.79	.76	78	.76	.77
Cons. Imperial.....	"	100	.....	.....	.....	.....	.....	.....
Cons. New York.....	"	100	.02	.02	.....	.....	.02	.02
Crown Point	"	100	.13	.13	.13	.13	13	.4
Exchequer.....	"	100	.04	.04	04	04	.04	.05
Gould & Curry..	"	100	.17	.18	.8	.17	.17	.18
Hale & Norcross ..	"	100	1.45	1 45	.....	1 45	...	1 40
Julia	Colo.	100	.01	.01	.01	.01	02	.02
Justice.....	Nev.	1	28	.28	.....	.....	.....	.....
Kentuck Con.....	"	100	.02	.02	.02	.02	.02	.02
Lady Wash. Con.....	"	100	.....	.....	.....	.....	.....	.....
Mexican.....	"	100	.33	.29	.28	.3	.29	.29
Occidental Con.....	"	100	1.60	1 6)	1.55	1.55	1.55	1 55
Ophir.....	"	100	.43	.44	.44	.44	43	.45
Overman.....	"	100	11	.10	10	.11	.11	.11
Potosi.....	"	100	.16	.17	.16	.35	.36	35
Savage	"	100	.24	.24	.23	.22	.22	.23
Scorpion	"	100	.....	.....	.....	.....	.....	.....
Sierra Nevada.....	"	100	.94	98	.96	1.00	.....	1 05
Silver Hill.....	Cal.	100	.....	.....	.....	.....	.....	.....
Standard.....	Nev.	100	1.55	1.15	....	1 65	1.75	1 75
Union Con....	"	100	.32	.33	.33	.34	.33	.35
Utah Con.....	"	100	.08	.09	.09	.10	.10	12
Yellow Jacket.....	.....	100	21	21	.23	.26	.27	25

* Official telegraphic quotations, San Francisco Stock Exchange.

LOS ANGELES, CAL.*

NAME OF COMPANY.	Location.	Par val	Feb. 21. H.	Feb. 21. L.	Feb. 22. H.	Feb. 22. L.	Feb. 23. H.	Feb. 23. L.	Feb. 24. H.	Feb. 24. L.	Feb. 25. H.	Feb. 25. L.	Feb. 26. H.	Feb. 26. L.	Sales
Listed:															
Brown Dake...	Ariz..	$1	.10	.....	.....	.....	.08	.....	.....	.....	.07	.....	.....	.....	4,000
Cavil.....	Cal....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
East Amargosa.	" ...	1	003¼	.....	.....	.....	0015	003¼	.0 15	003¼	0014	.....	.001	003¼	37,000
Gold Bug	" ...	1	005	.....	.....	.....	.005	.....	003	.....	.0 32	.....	.003	.....	.....
Laguna.....	" ...	2¾	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Lucky Star	" ...	1	005	.....	.....	.....	005	.....	.....	.....	.....	.....	0085	.....	1,000
Magganetta	" ...	1	.005	.0021	.....	.....	004	.....	0045	004	0035	003	003	.....	12,000
Mohawk-Acton	" ...	1	003¼	.0.¾	.....	.....	.004	.....	003¼	.....	003¼	.....	003¼	.....	†
*Old Dominion	" ...	1	.....	.02¾	.....	.....	03½	.03	.03¾	.03	03¼	.03	03¼	.....	.....
Pacific Con..	" ...	1	.0025	.....	.....	.....	0.25	.....	0.25	.....	.0025	.....	.0025	.....	.....
Rand Mtn.....	" ...	1	0015	.....	.....	.....	.0015	003¼	.0015	003¼	.0017	003¼	001	.....	.....
Sun Dance. ...	" ...	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Wedge.....	" ...	1	.04½	.....	.....	.....	.04	.....	04½	.04	.04½	.....	.04¾	04	3,100
Unlisted:															
Amargosa.....	Cal...	1	.03	.....	.....	.....	.03	.....	02¾	.....	.04¾	.02¾	.06	.02¾	.....
Iron Mt.....	Colo..	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Ivy Group.....	Ariz .	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Little Butte....	Cal.	1	.....	.....	.....	.....	19	08	.....	.06	.....	.....	.....	.....	.....
Portland...	Colo .	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Val Verde.....	Cal..	1	.0025	01¼	.....	.....	005	001	.0 3	001	.0035	001	003	.....	.....

‡ Official quotations, Los Angeles Mining and Stock Exchange. * Bid and ask quotations. Total shares sold, 224,100. †165,000.

SALT LAKE CITY, UTAH.* Week ending Mar. 5.

STOCKS.†	No. of shares	Par val.	Bid.	Asked.	STOCKS.†	No of shares.	Par val.	Bid.	Asked.
Ajax.....	300,000	$10	$0.35	$0.40	Homestake.....	400,000	$1	$0 00¾	$0.02¼
Alliance.....	100,000	1	.....	.....	Horn Silver.	400,000	25	1 25	.....
Anchor.....	150,000	10	.60	1.50	Little Pittsburg..	400,000	5	.02	.03
Bogan.....	125,000	10	.....	.....	Lower Mammoth	150,000	1	.....	.....
Brick Con..	500,000	1	.....	.....	Lucky Bill.....	120,000	2½	.....	.....
Buckeye.....	500 000	1	.01	.02	Malvern.....	600,000	2½	.....	.....
Bullion-Beck & Ch.	100,000	10	5.60	6.00	Mammoth.....	400,000	5	2.12½	2 20
Centennial Eureka	30,000	50	21.00	24.50	Mercur.....	200 000	25	8 45	8.50
Chloride Point.	500,000	1	.65¼	.70	Northern Light..	400,000	5	22	.23
Dalton.....	500,000	5	.01	.01¼	Omaha.....	300.000	2	.22	.30
Dalton & Lark.....	2,500,000	1	.02	.10	Ontario.....	150,000	100	3.15	4.00
Daly.....	150,000	20	.60	.75	Overland	400,000	5	.55	.75
Daly West.....	75,000	20	3.50	4.50	Richmond-An. ..	500,000	1	.03¼	.03¾
Dexter.....	200,000	5	.97½	1.10	Sacramento	1,000,000	5	.81	.84
Eagle.....	150,000	1	.03½	.05	Silver King.	150,000	20	16 87½	18.50
Emerald	300,000	1	.02½	.03¾	Sunbeam.....	250,000	1	.03	.03¼
Four Aces..... .	250,000	1	.02½	.04	Sunshine.....	250,000	10	.24¾	26
Galena	100,000	10	.56	.59	Swansea	100,000	5	2.12½	2.20
Geyser-Marion.....	300,000	5	.90	.95	South Swansea..	150,000	1	1.30	1 22½
Grand Central	250,000	1	1.50	2.25	Utah.....	100,000	10	.54¼	.57½

*From Our Special Correspondent. † Utah companies. ‡ Mines in Vanderbilt, Cal. ¶ Mines in Tuscarora, Nev.

ROSSLAND, BRITISH COLUMBIA.* Mar. 9.

NAME OF COMPANY.	No. of shares.	Par value	Selling price.	NAME OF COMPANY.	No. of shares.	Par value.	Selling price.
Abe Lincoln..	1,000,000	$1	$0.15	Le Roi.	500,000	$5	$9 00
Alberta..	1,000,000	1	.07	Lily May.....	1,000,000	1	.18
Big Chief.	1,000,000	1	.07	Mayflower.....	1,000,000	1	.....
Big Three.....	3,500,000	1	.....	Monita.....	750,000	1	.15
Blue Bird	600,000	1	.05	Monte Cristo.	1,000,000	1	.....
Butte	1,000,000	1	.05	Morning Star.....	1,000,000	1	.05
California.....	2,500,000	1	.05	Noble Five Con.....	1,200,000	1	.05
Canadian Gold Fields	.....	10	.10	Novelty.....	1,000,000	1	.....
Cariboo.....	800,000	1	.50	O. K	1,000,000	1	.....
Colonna.....	1,000,000	1	.....	Palo Alto.....	500,000	1	.....
Commander.....	.....	.....	.10	Poorman.....	1,000,000	1	.....
Coxey	.....	1	.10	Rambler Con.....	1,000,000	1	.40
Delaware.....	1,000,000	1	.....	Reco.....	1,200,000	1	.....
Deer Park..	1,000,000	1	.15	Red Eagle..	1,00,000	1	.....
Dundee.....	.....	1	.75	Red Mt. View	1,000,000	1	.....
Evening Star.....	1,000,000	1	.10	Rossland Develop.Co.	1,000,000	1	.....
Giant.....	2,750,000	1	.....	Rossland R. Mtn.....	500,000	1	.20
Golden Drip	500,000	1	.05	Rossland Star.	1,000,000	1	.08
Great Western...	1,000,000	1	.....	St. Elmo.	1,000,000	1	.....
Hattie Brown.....	1,000,000	1	.....	St. Paul.....	1,000 000	1	.....
Homestake G. Mg. Co	.....	1	.05	Silver Bell.....	1,000,000	1	.....
Iron Colt.....	.....	1	.12	Silverine.....	500,000	1	.....
Iron Horse.....	1,000,000	1	.10	Silver Queen	1,250,000	.....	.20
Iron Mask.....	500,000	1	.40	Slocan Star.....	500,000	1	2.40
Ivanhoe.....	1,000,000	1	.05	Sunset No. 2.....	.....	1	.10
I. X. L.....	1,000,000	1	.15	Virginia	500,000	1	.10
Josie.....	700,000	1	.....	War Eagle Con.....	2,000,000	1	.95
Jumbo.....	500,000	1	.25	White Bear.	2,000,000	1	.15
Keystone.....	.....	1	.20	Wild Horse.....	.....	1	.10
Kootenay, London ..	1,000,000	1	.....	Yale.....	1,000,000	1	.....

* From Our Special Correspondent.

MEXICO. Week ending Mar. 2.

NAME OF COMPANY.	State.	No. of shares.	Last dividend.	Last assessment.	Prices. Opening.	Prices. Closing.
Alianza.....	Hidalgo.....	12,800	.....	.....	25	$5
Amistad y Concordia	"	9,600	$2 45	.....	24	20
Angustias.....	Guanajuato....	2,400	30.00	.....	630	580
Arevalo y Anexas....	Hidalgo.	720	10.00	.....	300	200
Asturiana y Anexas..	Zacatecas.....	2,500	10.00	.....	210	200
Barradon y Cabras .	Durango.....	2,400	.....	.....	300	300
Bartolome deMedina	Hidalgo.....	2,000	3.00	.....	80	90
Cabezon y Anexas...	Zacatecas.....	2,400	.....	.....	30	30
Candelaria de Pinos.	"	2,500	.....	.....	190	175
Candelaria dePanuco	Durango.....	1,300	.....	.....	20	20
Candelaria deChalch	"	1,600	.....	.....	80	80
Capuzaya.....	"	2,400	.....	.....	150	120
Carmen.....	Hidalgo.....	1,100	7.75	.....	350	370
Castellana y SanRam	Tepic.....	2,448	3.00	.....	100	90
Cerro Colorado.....	Chihuahua.....	15,000	... .	$1.00	10	10
Cinco Senores y An..	Guanajuato....	2,000	15.00	.....	540	580
Concepcion y Anexas	S. Luis Potosi...	2,400	.....	.....	150	100
Coronas	Mexico.....	500	.....	.....	75	75
El Oro.....	Guanajuato.....	500	.....	.....	40	80
do. pref.	"	2,000	.....	.....	40	80
Esperanza y An.....	Mexico.....	3,000	10.00	.....	1,300	1,500
Guadalupe.....	Guanajuato. ..	10,000	2.00	.....	160	150
Huautla.....	Santa Ana.....	4,000	1.00	.....	100	80
Luz de Borda	Michoacan.....	4,000	.....	.....	25	40
Luz de Maravillas....	Hidalgo.....	1,000	.....	.....	200	180
Pabellon.....	"	800	27.89	.....	150	80
Palma.....	Zacatecas.....	2,400	.....	.....	170	130
Real del Monte.....	Hidalgo.....	2,554	10.00	.....	810	850
Restauradora..... ..	Durango...	10,000	.....	.....	60	30
Rosario y Anexas....	"	4,800	.....	.....	60	40
San Francisco...	Hidalgo.....	6,000	4.00	.....	220	200
S. Ped. Chalchihuites	"	1,000	2.00	.....	80	100
San Rafael y Anexas	"	1,200	10.00	.....	1,100	1,050
do. free stock.	"	1,200	10.00	.....	550	520
San Rafael del Oro..	Hidalgo	3,000	.....	.....	25	20
Sta. Maria de la Paz..	S. Luis Potosi..	2,400	10 00	.....	730	770
Sirena.....	Durango.....	2,400	3.00	.....	50	30
Soledad.....	Hidalgo.....	960	7.50	.....	550	520
Sorpresa.....	"	960	5.00	.....	280	300
Trinidad.....	Guanajuato....	2,000	.....	.....	70	60
Tlauzingo.....	Puebla..... ...	2,400	.....	.....	27	40
Union.	Hidalgo.....	2,000	4.00	.....	270	250
Zaragoza.....	"	1,000	.....	.....	15	15
Zomelahuacan (gold)	Vera Cruz	5,000	.....	.....	100	100
Zona Min. de Pozos..	Guanajuato....	2,400	.....	1.50	15	20

NOTE.– In most of the older Mexican mining companies the shares have no fixed par value. The capital is formed of a certain number of shares, the total value not being named. Many newer companies have a nominal par value, usually $50 or $100. Prices are in Mexican dollars.

STOCK QUOTATIONS.

LONDON.

Feb. 25.

NAME OF COMPANY.	Country.	Authorized capital.	Par value.	Last dividend. Amt.	Last dividend. Date.	Quotations. Buyers	Quotations. Sellers
			£ s. d	s.d.		£ s. d.	£ s. d.
Alaska-Mexican, g	Alaska	£200,000	1 0 0	0 4.8	Jan., 1898	1 2 6	1 7 6
Alaska-Treadwell, g	"	1,000,000	5 0 0	1 6	"	5 0 0	5 5 0
Anaconda, c., s	Montana	4,000,000	5 0 0	5 1¼	Nov., "	5 3 9	5 6 3
Chiapas, g., s., c	Mexico	262,500	1 0 0	.....	.....	5 0	7 0
De Lamar, g., s	Idaho	400,000	1 0 0	1 0	Nov., 1896	2 6	3 6
Elkhorn Priority (New), s	Colorado	87,500	1 0 0	1 0	Sept., 1896	1 3	3 9
Grand Central, g., s	Mexico	250,000	1 0 0	1 0	Dec., 1897	1 13 9	1 16 3
Hall Mines, c., s	British Col	250,000	1 0 0	2 0	" "	1 10 0	1 12 6
Montana, g., s	Montana	660,000	1 0 0	0 6	June, 1896	4 0	5 0
Palmarejo, g., s	Mexico	800,000	1 0 0	.....	.....	.....	6
Plumas-Eureka, g	California	281,250	2 0 0	0 6	Oct., 1896	1 3	3 9
Richmond, g., s., l	Nevada	270,000	5 0 0	1 0	Dec., "	7 6	10 6
Sierra Buttes, g	California	245,000	2 0 0	0 6	Apr., "	1 3	3 9
Central Chile Copper	Chile	225,000	1 0 0	.....	.....	5 0	7 6
Colomb. Hydraulic, g	Colombia	75,000	1 0 0	1 0	July, 1895	7 6	10 0
Copiapo, c., s	Chile	200,000	2 0 0	1 6	June, 1897	2 5 0	2 10 0
Frontino & Bolivia, g	Colombia	140,000	1 0 0	2 0	Dec., "	2 7 6	2 10 0
St. John del Rey, g	Brazil	600,000	1 0 0	0 6	July, 1897	18 0	19 0
Tolima A., s., g	Colombia	70,000	5 0 0	5 0	" "	2 15 0	3 5 0
Tolima B., s., g	"	30,000	5 0 0	5 0	" "	2 0 0	3 0 0
Libiola, c	Italy	250,500	5 0 0	2 0	Sept., 1897	2 2 6	2 17 6
Linares, l	Spain	45,000	3 0 0	12 6	" "	7 10 0	8 10 0
Mason & Barry, c., sul	Portugal	630,000	3 0 0	3 6	May, "	3 12 6	3 17 6
Rio Tinto, c	Spain	1,625,000	5 0 0	£1	Nov., "	28 2 6	28 7 6
" " pref	"	1,625,000	5 0 0	2 6	"	6 2 6	6 7 6
Tharsis, c	"	1,350,000	2 0 0	7 0	April, "	7 5 0	7 10 0
Assoc. Gold Mines	W. Australia	5 0,000	1 0 0	xbo.	Nov., "	4 0 0	4 2 6
Broken Hill Prop., s	N.S.Wales	384,000	8 0	1 6	Jan., 1898	1 1 3	1 3 9
Great Boulder, g	W. Australia	1,750,000	2 0	6	Feb., 1898	2 1 0	2 2 0
Hannan's Brownhill, g	"	110,000	1 0 0	5	Jan., 1898	7 17 6	8 0 0
Hauraki, g., s	New Zealand	40,000	2 6	0 6	Apr., 1897	4 0	5 0
Ivanhoe, g., s	W. Australia	1,700,000	5 0 0	.....	.....	6 8 9	6 11 3
Kalgurlie, g	"	120,000	1 0 0	.....	.....	5 12 6	5 15 0
Lake View Consols, g	"	250,000	1 0 0	10 0	Nov., 1897	9 3 9	9 16 3
Mt. Lyell Min. & R., l., c	Tasmania	900,000	3 0 0	4 0	Apl., 1898	13 17 6	14 2 6
Mt. Morgan, g	Queensland	1,000,000	1 0 0	6	Feb., "	4 7 6	4 12 6
Waihi, g	New Zealand	160,000	1 0 0	2 0	Mar., 1898	4 10 0	4 12 6
" (New)	"	160,000	1 0 0	5 0	Mar., 1898	3 0 0	3 5 0
Waitekauri, g	"	150,000	1 0 0	1 0	June, 1897	1 17 6	2 2 6
Wentworth, g., s	N. S. Wales	500,000	1 0 0	1 0	Apr., 1896	7 6	10 0
West Aust. Jnt. Stk. Trust	W. Australia	250,000	1 0 0	1 0	Jan., 1898	2 10 0	2 12 6
Burma Ruby	Burma	299,0 0	12 0	.....	.....	8 6	9 6
Champion Reef, g	Colar Fields	220,000	10 0	3 6	Jan., 1898	4 17 6	5 0 0
Coromandel, g	"	180,000	1 0 0	3 0	"	3 2 6	3 5 0
Mysore Gold, g	"	250,000	10 0	4 6	Mar., 1898	5 8 9	5 11 3
Nundydroog, g	"	220,000	1 0 0	3 0	Nov., 1897	3 16 3	3 18 9
Ooregum, g	"	145,000	1 0 0	0 6	July, "	2 12 6	2 17 6
" pref., g	"	120,000	1 0 0	2 6	"	3 7 6	3 12 6
Angelo, g	Transvaal	275,000	1 0 0	5 0	Apl., 1898	5 7 6	5 12 6
Bonanza, g	"	200,000	1 0 0	10 0	Dec., 1897	3 13 9	3 16 3
British S. Af., chartered	So. Africa	3,500,000	1 0 0	rts.	Jan., "	2 16 3	2 18 9
Cape Copper, c	"	600,000	2 0 0	6 6	" 1898	4 12 6	4 17 6
City & Suburban (New), g	Transvaal	1 360,000	4 0 0	8 0	Feb., 1898	5 15 0	5 17 6
Con. Deep Level, g	"	200,000	1 0 0	6 0	Aug., 1897	5 2 6	5 7 6
Con. Gold Fields	So. Africa	1,450,000	1 0 0	xb.	Nov., "	4 11 3	4 13 9
Crown Reef, g	Transvaal	120,000	1 0 0	18 0	Oct., "	12 0 0	12 5 0
De Beers Con., d	Cape Colony	3,950,000	5 0 0	£1	Feb., 1898	29 6 3	29 8 9
Durban Roodepoort, g	Transvaal	135,000	1 0 0	5 0	Dec., 1897	5 12 6	5 17 6
East Rand, g	"	750,000	1 0 0	rts.	Apr. 1895	4 11 3	4 13 9
Ferreira, g	"	90,000	1 0 0	30 0	Mar., 1898	25 5 0	25 15 0
Geldenhuis Deep, g	"	350,000	1 0 0	6 0	Dec., 1897	6 10 0	6 15 0
Geldenhuis Est., g	"	200,000	1 0 0	6 0	Oct., "	4 15 0	4 17 6
Glencairn Main Reef, g	"	550,000	1 0 0	rts.	Sept., 1896	2 0 0	2 2 6
Goldfields Deep, g	"	600,000	1 0 0	rts.	July, 1897	10 3 9	10 6 3
Henry Nourse, g	"	125,000	1 0 0	15 0	Feb., 1898	8 15 0	9 0 0
† Heriot (New), g	"	115,000	1 0 0	5 0	" "	7 0 0	7 5 0
Jagersfontein, d	Orange Fr. St	1,000,000	5 0 0	6 0	Oct., 1897	7 17 6	8 2 6
Johannesburg Con	So. Africa	2,750,000	1 0 0	2 0	Aug., "	1 13 9	1 16 3
Jubilee, g	Transvaal	50,000	1 0 0	5 0	Mar., 1898	8 5 0	8 15 0
Jumpers, g	"	100,000	1 0 0	7 0	" "	5 0 0	5 5 0
Kleinfontein g	"	231,250	1 0 0	rts.	Sept., 1896	2 7 6	2 10 0
Langlaagte Estates, g	"	500,000	1 0 0	3 0	Mar., 1898	3 10 0	3 15 0
May Con. (New), g	"	375,000	1 0 0	2 0	Jan., 1897	2 3 9	2 6 3
Meyer & Charlton, g	"	85,000	1 0 0	6 0	Dec., "	4 7 6	4 13 6
Namaqua, c	Cape Colony	200,000	2 0 0	2 0	" "	2 7 6	2 10 0
Primrose (New), g	Transvaal	800,000	1 0 0	4 0	May, "	3 11 3	3 13 9
Rand Mines, g	So. Africa	400,000	1 0 0	.....	.....	31 0 0	31 2 6
Robinson, g	Transvaal	2,750,000	5 0 0	5 0	Mar., 1898	8 10 0	8 15 0
Sheba, g	"	1,100,000	1 0 0	1 0	Jan., 1898	2 2 6	2 7 6
Sim. & Jack (Prop.), g	"	5,000,000	5 0 0	2 0	Aug., 1895	2 12 6	3 15 0
† Wemmer, g	"	80,000	1 0 0	15 0	Nov., 1897	8 2 6	8 7 6
‡ Wolhuter, g	"	860,000	4 0 0	8 0	Dec., "	6 0 0	6 5 0

† Dividend pending. ‡Ex-dividend.

PARIS.*

Week ending Feb. 17.

NAME OF COMPANY.	Country.	Product.	Capital Stock.	Par value.	Latest divs.	Prices. Op'ning.	Prices. Closing
			Francs.	Fr.		Fr.	Fr.
Acieries de Creusot	France	Steel mfrs.	27,000,000	2,000	80.00	2,150.00	2,145.00
" " Firminy	"	" "	3,000,000	500	85.00	2,400.00	2,395.00
" " Fives-Lille	"	" "	12,000,000	500	35.00	857.00	860.00
" " Huta-Bank	Russia	Iron & steel	.....	500	.....	4,075.00	4,110.00
" " la Marine	France	Steel mfrs.	40.000,000	500	40.00	1,5 4 00	1,430.00
" " Longwy	"	" "	.....	500	35.00	890 00	890.00
Anzin	"	Coal	.....	.....	190.00	5,775.00	5,700.00
Blache-St. Vaast	"	Steel	.....	1,000	160 00	3,8 0.00	3,800.00
Boleo	Lower Cal.	Copper	.....	500	93.50	2,195.0.	2,19 .00
Brianski	Russia	Coal & Iron	.....	500	.....	1,340.00	1,325.00
Bruay	France	Coal	3,000,000	400	800 00	35,475.00	35,500.00
Cape Copper	S. Africa	Copper	15,000,000	50	4.00	129 5	127.0
Champ d'Or	"	Gold	3,375,000	25	.....	39.00	37.00
Courrieres	France	Coal	600,000	300	160.00	1,995.00	1,950.00
De Beers Consolidated	S. Africa	Diamonds	98,750,000	125	15.63	771.50	743.00
Denain-Anzin	France	Steel	.....	500	20.00	820.00	795.00
Dombrowa	Russia	Coal	.....	500	12 50	660.00	670.00
Donetz	"	Steel	.....	.....	.....	1,080 00	1,080.00
Dourges	"	Coal	.....	1,000	250.00	13,750.00	13,750.00
Dynamite Centrale	France	Explosives.	.....	500	12.50	472 00	468.00
Epinac	"	Coal	.....	2,500	30.83	600 00	600.00
Fraser River	Brit. Col'mb	Gold	250.000	25	.....	11.50	11.25
Huanchaca	Bolivia	Silver	40,0.0,0	125	5.00	4'.00	41.00
Kebao	Tonkin	Coal	.....	.....	.....	34.00	30.00	
Langlaagte Estate	S. Africa	Gold	11,750,000	25	11.25	96 00	95.00
Lavunas	Chile	Nitrates	.....	125	12.50	69 00	62.00
Laurium	Greece	Zinc & lead	16,300,000	500	40.00	590.00	590.00
Lautaro	Chile	Nitrates	.....	125	.....	112.00	110.00
Malfidano	Italy	Zinc	12,500,000	500	40.00	1,074.00	1,085.00
Metaux, Cie. Fran. de	France	Metal d'lers.	25,000,000	500	12.00	690.00	688.00
Mokta-el-Hadid	Algeria	Iron	18,312,500	500	40.00	970.00	980.00
Napthe Baku	Russia	Petroleum	.....	.....	.....	536.00	556.00
Napthe, Le	"	"	.....	.....	.....	2,700.00	2,700.00
Napthe Nobel	"	"	.....	.....	.....	380.00	380.00
" parts	"	"	.....	.....	.....	7,500.00	7,550.00
Nickel	N. Caled'nia	Nickel	12,720,000	500	30.00	288 00	3 0.00
Pacchа-Jazpampa	Chile	Nitrates	.....	.....	.....	12.00	12.00
Penarroya	Spain	Coal, etc	.....	500	65.00	2.275.00	2,385.00
Rebecca	Colo'do, U.S.	Gold	.....	25	.....	5.00	5.00
Rio Tinto	Spain	Copper	40,625,000	125	47.50	7 2 00	730.00
" preferred	"	"	40,625,000	125	.....	154 00	154.00
Rive-de-Gier	France	Coal	.....	.....	.....	19.00	18.00
Robinson	S. Africa	Gold	68,750,000	125	12.50	226.00	223.00
St. Etienne	France	Coal	.....	.....	.....	17.00	433.00	432.00
Salines de l'Est	France	Salt	.....	500	11.5.	260.50	263 50
Salines du Midi	France	" etc	.....	5 0	40.00	882.50	88 .00
Sels Gem. de la Rus. Mer	Russia	etc	.....	500	25.00	6 7.5	590 00
Tharsis	Spain	Copper	33,750,000	50	8.75	191.0	193 00
Vicoigne-Neux	France	Coal	.....	1,000	700 00	23,2 0.00	23,450.00
Vieille Montagne	Belgium	Zinc	9,000,000	80	20.00	670 00	679.00

*From our special correspondent.

VALPARAISO, CHILE.*

Jan. 29

NAME OF COMPANY.	Location.	Capital paid.	Sh. Val. paid up.	Last Div'n'd. Amt.	Last Div'n'd. Date.	Prices. Bid.	Prices. Asked.	Prices. Last sale
Arturo Prat, silver	Chile	$3,300,000	$100	12 p. c.	1896	$16	$18	$17
Caracoles, silver	"	315,000	100	10 "	1894	.....	.....	.....
Huantajaya (mine) silver	"	1,000,000	100	13 "	1-94	2	$2	2¼
Huanchaca, silver	Bolivia	8,000,000	25	8 "	1895	17¼	18	18
Oruro, silver	Chile	800,000	200	.....	.....	210	220	220
S. Agus. de Huanta, silver	"	1,500,000	100	2½ "	1895	.....	.....	.....
Todos Santos, silver	"	2,000,000	100	1 "	1895	5	6	7
Huantajaya (mill)	"	600,000	100	5 "	1896	.....	.....	.....
Agua Santa nitrate	"	3,000,000	50	4 "	1897	166	112	110
Antofagasta, nitrate	"	2,000,000	200	3 "	1898*	90	92	90
Union, nitrate	"	1,600,000	160	.....	.....	45	50	55

* Special Report of Jackson Bros. Values are in Chilean pesos or dollars.

SHANGHAI, CHINA.*

Jan. 28.

NAME OF COMPANY.	Country.	No. of shares.	Value. Par.	Value. Paid up.	Last dividend. Date.	Last dividend. Amount.	Price.
Jelebu Mg. & Trad	China	45,000	$5	$5	Oct., 1894	$0.25	Taels 1.46
Punjom Mg., Ltd.	"	59,349	4	4	Jan 1897	.20	" 4.93
do. pref	"	30,000	1	1	" "	.50½	" 0 88
Raub A'lian G. Mg	"	200,000	£1	13s 10d.	June, 1896	.32	" 17.15
Sheridan Con. M.& M.	Colorado, U.S	20,000	Taels 100	Taels 100	.....	.....	" 2.50

* special Report of J. P. Bissett & Co The prices quoted are in Shanghai taels.

DIVIDENDS.

NAME OF COMPANY.	Current dividends. Date.	Current dividends. Am't.	Paid since Jan. 1, 1898.	Total to date.
Ætna Con	Mar 10	$10,000	$10,000	$130,000
*Alaska-Mexican	.....	.....	36 000	263.031
*Alaska-Treadwell	.....	.....	150,000	3,400,000
*Anchoria Leland	.....	.....	12,000	114,000
*Atlantic	.....	.....	40,000	780,000
Big Seven	Mar. 1	3,000	3,000	.....
Big Six	.....	.....	2,500	10,000
*Boston&Montana	.....	.....	450,000	7,175,000
*Bunker Hill & Sullivan	.....	.....	30,000	402,000
Calumet & Hecla	Apr. 1	1,000,000	2,000,000	52,850,000
*Central Lead	.....	.....	8,000	32,000
*Champion	.....	.....	8,500	279,200
*Doe Run	.....	.....	5,000	.....
*Dutch	.....	.....	10,000	32,500
*Elkton, Con	.....	.....	5 1,000	471,960
El Paso Gold	.....	.....	6,500	12,093
Fern, B. C	.....	.....	10,000	10,000
*Geyser Marion	.....	.....	9,000	72,000
*Gold Coin of Victor	.....	.....	20,000	30,000
Golden Cycle	.....	.....	5,000	65,000
*Golden Reward	.....	.....	15,000	155,000
Golden Star	.....	.....	2.500	2 500
Hope of St. Louis	Mar. 1	10,000	20,000	762,252
*Holy Terror	.....	.....	18,000	54,000
*Homestake	.....	.....	93,750	6,618,750
*Jamison	.....	.....	19,500	19,500
Le Roi	.....	.....	50.000	675.000
*Lillie	.....	.....	17.100	35,110
Mammoth	Mar. 1	20,000	40 000	1,190,000
*Mercur	.....	.....	72,000	992 000
Mont. Ore Pur	.....	.....	40,0 0	680,000
*Moon-Anchor	Mar. 2	15,000	45,000	138,000
*Morning Star	Mar.	14,400	43,200	639,600
Mt. Rosa	.....	.....	20,000	60,000

NAME OF COMPANY.	Current dividends. Date.	Current dividends. Am't.	Paid since Jan 1, 1898.	Total to date.
*Napa Con	Apl. 1	$20,000	$20,000	$910,000
New Idria	Mar 1	15 000	15,000	45,000
*New York & Honduras Rosario	Mar. 5	15,000	30,000	885,000
Parrot	.....	.....	138,000	1,794,122
*Pennsylvania	.....	.....	5,150	28,475
*Pioneer	.....	.....	12,500	12,500
*Portland	.....	.....	60,000	1,283,000
*Quincy	.....	.....	300,000	9,770,000
Raven	Mar. 1	10,000	20,000	20,000
Reco, B. C	.....	.....	100,000	287,590
Ruby, Mont	Mar. 6	6,000	6,000	.....
*Ruth, B. C	.....	.....	75,000	75,000
*Sacramento	.....	.....	10,000	32,000
*Santa Rosalia	.....	.....	10,000	125,000
*Silver King	.....	.....	37 500	1,350,000
Standard Con	Mar28	17,000	17,0 0	5,654,940
*Swansea	Mar10	5,000	15 000	86.500
Victor	Mar. 1	50,000	50 000	855,000
Western Mine, Enterprise	.....	.....	10,000	48,680
Whitewater, B.C.	.....	.....	30,000	154,000
Totals	.....	$1,210 400	$4 322.400	101,558,213

NOTE.—This table does not give all the dividends paid by mining companies, as it is impossible to obtain a complete list of dividends declared. Many companies are close corporations and refuse to give the information. Readers of the "Engineering and Mining Journal" will confer a favor on the publishers if they will notify the "Journal" of any errors or omissions in the above table. * February dividend paid.

ASSESSMENTS.

NAME OF COMPANY.	Location.	No.	Dinq.		Sale.		Amt.
Abbie	Cal	2	Mar.	1	Mar.	22	.02½
Alamo	Utah	2	"	14	Apr	14	.01¼
Alpha	Nev	20	"	8	Mar.	29	.05
Baliol	Cal	2	"	4	"	28	.30
*Central Eureka	Cal	7	"	12	Apr.	5	01½
*Con. Imperial	Nev	40	Apr.	5	"	26	.01
Confidence	Cal	5	Mar.	21	"	11	.30
Crown Point	Nev	73	"	28	"	18	.10
*Dexter	"	.....	Apr.	4	.....	.....	.15
Fall River Con	Cal	11	Feb.	25	"	21	.05
Four Aces	Utah	.....	Mar.	18	"	8	.01
Grizzly	Cal	1	"	11	Mar	28	.15
Horse Shoe Bar Con	"	9	Feb.	26	"	21	.10
*Junction	"	17	Mar.	5	"	28	.03
Jupiter	"	2	Feb.	16	"	16	.20
*Kate Hayes	"	.....	Apr.	5	.....	.....	1.00
Karau	"	1	Feb.	26	"	26	.02½
*Marguerite	"	9	Apr.	6	May	2	.10
*N. Bloomfield	"	50	"	6	.....	.....	25
Northern Light	Utah	.....	Mar.	1	Mar.	22	.10
*Ophir	Nev	72	"	29	Apr.	18	.25
Orleans	Cal	7	"	8	Mar.	28	.10
Overman	Nev	79	"	2	"	23	.15
Potosi	"	49	"	11	Apr.	4	.20
Reward	Cal	.....	Mar.	15	.....	.....	.02
Santa Eulalia	Mex	1	Feb.	18	Mar.	15	10
Salt Lake & Nevada	Utah	.....	Mar.	1	"	22	.01
Sierra Nevada	Nev	114	Feb.	23	"	14	20
South Fork Con.	Utah	.....	Mar.	3	Apr.	4	.01
Star	"	.....	"	10	Mar.	26	.00½
Sunbeam Con	"	.....	"	4	"	21	.00½
Thorpe	Cal	9	Feb.	26	"	21	.00½
Trinity	"	2	Feb	23	Apr.	20	01
Utah	Utah	.....	Mar.	20	Mar.	10	.01
Vallejo Q	Cal	.....	"	4	.....	.....	.01

* New assessment.

DIVIDEND-PAYING MINES.

	Name and Location of Company.		Capital Stock.	Shares. No.	Shares. Par Val	Assessments. Total Levied.	Assessments. Date and Amount of Last.			Dividends. Total Paid.	Dividends. Date and Amount of Last.		
1	Adams, s. l. c.	Colo..	$1,500,000	150,000	$10	*				$693.500	Oct..	1895	.04
2	Ætna Cons., q.	Cal ..	500,000	100,000	5	*				130,000	Mar..	1898	.10
3	Alaska-Mexican, g.	Alask	1,000,000	200,000	5					263,031	Feb..	1898	.10
4	Alaska-Treadwell, g.	Alask	5,000,000	200,000	25	*				5,400,000	Feb..	1898	.37½
5	Alice, g. s.	Mont.	10,000,000	400,000	25	*				1,055,000	Dec..	1897	.03
6	American Gold, g. s. l.	Colo..	3,000,000	300,000	10	*				285,000	Dec..	1897	.05
7	Anaconda Copper	Mont.	30,000,000	1,200,000	25					5,250,000	Nov..	1897	1.25
8	Anchoria-Leland, g.	Colo..	600,000	600,000	1	*				114,000	Feb..	1898	.01
9	Argentum Juniata, g.s.l	Colo..	2,600,000	1,300,000	2	*				39,000	July..	1895	.03
10	Aspen Mg. & S., s. l.	Colo..	2,000,000	200,000	10	*				900,000	July..	1894	.10
11	Atlantic, c.	Mich.	1,000,000	40,000	25					780,000	Feb..	1898	1.00
12	Aurora, l.	Mich.	2,500,000	100,000	25	*				700,000	April.	1896	.50
13	Bald Butte	Mont.	250,000	250,000	1	*				512,500	Sept..	1897	.03
14	Bangkok-Cora Bell, s. l.	Colo..	600,000	600,000	1					107,510	July..	1896	.01
15	Belden, F. E., m.	N. H.	500,000	100,000	5	*				217,000	Jan..	1896	.04
16	Big Six, g. s.	Colo..	500,000	500,000	1					10,000	Jan..	1898	.00½
17	Bi-Metallic, g. s.	Mont.	5,000,000	200,000	25	*				1,630,000	June.	1893	.10
18	Boston & M. Cons., g.s.c	Mont.	3,750,000	150,000	25	*				7,175,000	Feb..	1898	3.00
19	Bullion, Beck & Champ.	Utah.	1,000,000	100,000	10	*				2,117,000	Mar..	1897	.50
20	Bunker Hill & S., s. l.	Idaho	3,000,000	300,000	10					402,000	Feb..	1898	.05
21	Calumet & Hecla, c.	Mich.	2,500,000	100,000	25					51,850,000	Jan..	1898	10.00
22	Cariboo	B.C..	800,000	800,000	1					173,965	Dec..	1897	.02
23	Centen'l-Eureka, g.s.l.c	Utah.	1,500,000	30,000	50	30,000	Mar..	1889	1.00	2,010,000	Mar..	1897	1.00
24	Central Lead, l.	Mo...	400,000	4,000	100	*				32,000	Feb..	1898	1.00
25	Champion, g. s.	Cal...	340,000	34,000	10					129,200	Feb..	1898	.25
26	Charleston, p. r.	S. C..	1,000,000	10,000	100	*				150,000	Feb..	1897	1.00
27	C. O. D., g.	Colo..	500,000	500,000	1	*				25,000	Mar..	1896	.01
28	‡Cons. Cal. & Va., g. s.	Nev..	21,600,000	216,000	100	5,102,130	Dec..	1897	.25	3,898,800	Feb..	1895	.25
29	Coptis, g. s.	Nev..	10,000,000	100,000	100					77,000	Feb..	1895	.01
30	Dalton & Lark, s. l.	Utah.	2,500,000	2,500,000	1					87,500	Aug..	1896	.00½
31	Daly, s. l.	Utah.	3,000,000	150,000	20					2,925,000	Mar..	1897	.25
32	†Deadwood-Terra, g.	S. D..	5,000,000	200,000	25	*				1,320,000	June.	1897	.40
33	De Lamar, g. s.	Idaho	2,000,000	400,000	5	*				2,250,000	Oct..	1896	.25
34	Della S.	Colo..	1,000,000	1,000,000	1					60,000	Jan..	1897	.10
35	Doe Run, l.	Mo...	500,000	5,000	100						Feb..	1898	.50
36	Elkhorn, s.	Mont.	1,000,000	200,000	5					1,212,000	June.	1895	.06
37	Elkton Cons., g.	Colo..	1,250,000	1,250,000	1					481,960	Feb..	1898	.02
38	El Paso. g. s.	Colo..	650,000	650,000	1					12,093	Jan..	1898	.01
39	Fern.	B.C..	200,000	200,000	1					10,000	Jan..	1898	.05
40	Florence, s.	Mont.	2,500,000	500,000	5	*				132,530	May..	1897	.01
41	Franklin, c.	Mich.	1,000,000	40,000	25					1,240,000	Jan..	1894	2.00
42	Galena, g. s. l.	Utah.	1,000,000	100,000	10					71,000	Jan..	1897	.05
43	Garfield-Grouse, g.	Colo..	1,200,000	1,200,000	1	*				24,000	Feb..	1897	.01
44	Geyser-Marion, g.	Utah.	1,500,000	300,000	5					72,000	Feb..	1898	.03
45	Gold Coin, g. s.	Colo..	1,000,000	200,000	5	*				160,000	Nov..	1897	.05
46	Gold Coin of Victor, g.	Colo..	1,000,000	1,000,000	1					30,000	Feb..	1898	.01
47	Golden Cycle	Colo..	1,000,000	1,000,000	1					65,000	Jan..	1898	.00½
48	Golden Eagle, g.	Colo..	1,000,000	1,000,000	1	*				10,000	Sept..	1896	.01
49	Golden Fleece, g. s.	Colo..	600,000	600,000	1	*				569,179	Feb..	1897	.01
50	Gold & Globe, g.	Colo..	750,000	750,000	1					51,625	July..	1897	.00⅗
51	Golden Reward, g	S. D..	1,000,000	.....						140,000	Feb..	1898	.15
52	Hecla Cons., g. s. c. l.	Mont.	1,500,000	30,000	50	*				2,175,000	Feb..	1897	.50
53	Helena & Frisco, s. l.	Idaho	2,500,000	500,000	5	*				475,000	Aug..	1896	.04
54	Highland, g.	S. D..	10,000,000	100,000	100					3,424,918	Oct..	1897	.20
55	Holy Terror, g.	S. D..	300,000	300,000	1					51,000	Feb..	1898	.03
56	Homestake, g.	S. D..	12,500,000	125,000	100	200,000	July..	1878	1.00	6,618,750	Feb..	1898	.25
57	Hope of St. Louis, s.	Mont.	1,000,000	100,000	10	*				752,252	Jan..	1898	.10
58	Horn-Silver, g. s. c. sp. l.	Utah.	10,000,000	400,000	25	*				5,150,000	Dec..	1897	.05
59	Idaho	B. C..	500,000	500,000	1					152,000	Mar..	1897	.05
60	Iowa, g.	Colo..	1,000,000	1,000,000	1					75,000	Dec..	1897	.00½
61	Iron Mountain, s. l.	Mont.	5,000,000	500,000	10	*				497,500	Sept..	1897	.01
62	Isabella, g.	Colo..	2,250,000	2,250,000	1					270,000	June.	1897	.00½
63	Kearsarge, c.	Mich.	1,000,000	40,000	25	190,000	Oct..	1887	1.00	160,000	Aug..	1897	1.00
64	Kennedy, g.	Cal ..	10,000,000	100,000	100					1,796,000	Aug..	1898	.48
65	Last Chance, s. l.	B. C..	500,000	500,000	1	*				40,000	Jan..	1897	.04
66	Leadville Cons., s. l.	Colo..	4,000,000	400,000	10	*				316,000	Feb..	1893	.03
67	Le Roi	B. C..	500,000	500,000	5					675,000	Jan..	1898	.10
68	Lillie, g.	Colo..	1,000,000	1,000,000	1					35,110	Feb..	1898	.01
69	Little Chief, s. l. i-o.	Colo..	10,000,000	200,000	50	*				820,000	Dec..	1890	.05
70	Maid of Erin, g. s. c. l.	Colo..	3,000,000	600,000	5	*				740,000	Nov..	1895	.02
71	Mammoth, g. s. c.	Utah.	10,000,000	400,000	25	*				1,190,000	Mar..	1898	.05
72	Mayflower Gravel, g.	Cal ..	1,200,000	60,000	20					166,897	Dec..	1895	.10
73	May-Mazeppa Con., l. s.	Colo..	1,000,000	1,000,000	1	*				170,000	Oct..	1891	.03¾
74	Mercur, g.	Utah.	5,000,000	200,000	25	*				992,000	Feb..	1898	.18
75	Minnesota Iron, i.	Minn.	16,500,000	165,000	100	*				3,240,009	July..	1896	1.50
76	Mollie Gibson, s.	Colo..	5,000,000	1,000,000	5	20,000	Jan..	1891	.02	4,080,000	Jan..	1895	.05
77	Montana, Ltd., g. s.	Mont.	3,300,000	660,000	5	*				2,890 637	Oct..	1895	.06¼
78	Montana Ore Purchas'g	Mont.	1,000,000	40,000	25	*				680,000	Jan..	1898	1.00
79	Moon-Anchor Gold, g.	Colo..	600,000	600,000	1	*				108,000	Feb..	1898	.02½
80	Moose, g.	Colo..	600,000	600,000	1					186,000	Jan..	1896	.01
81	Morning Star, g.	Cal...	240,000	2,400	100	70,800	Feb..	1887	.75	625,200	Feb..	1898	6.00
82	Mt. Rosa, g.	Colo..	1,000,000	1,000,000	1					60,000	Jan..	1898	.02
83	Napa Cons., q.	Cal ..	700,000	100,000	7	*				890 000	Jan..	1898	.20
84	New Elkhorn	Colo..	1,500,000	300,000	5					72,000	Sept..	1896	.24
85	New Guston, g. s. c.	Colo..	550,000	110,000	5	*				1,198,120	Oct..	1892	.25
86	New Idria Quicksilver.	Cal...	500,000	100,000	5					45,000	Mar..	1898	.15
87	N.Y.&Hon.Rosario, s.g.	C. A..	1,500,000	150,000	10	*				885,000	Mar..	1898	.10
88	North Star, g.	Cal ..	2,000,000	200,000	10	20,000	June.	1885	.02	450,000	June.	1893	.50
89	Nugget, g.	Colo..	1,000,000	1,000,000	1	*				10,000	Jan..	1895	.00½
90	Ontario, s. l.	Utah.	15,000,000	150,000	100					13,557,500	Dec..	1897	.75
91	Osceola, c.	Mich.	1,250,000	50,000	25	*				2,222 500	Dec..	1897	1.00
92	Pacific Coast Borax, b.	Cal ..	2,000,000	20,000	100					422,500	July..	1893	1.00
93	Parrot, c.	Mont.	2,300,000	230,000	10	*				1,794,122	Jan..	1898	.60
94	Pennsylvania Cons.	Cal...	5,150,000	51,500	100	14,000	Feb..	1892	.05	28,475	Feb..	1898	.05
95	Pharmacist, g.	Colo..	1,200,000	1,200,000	1					80,000	Jan..	1893	.01
96	Pioneer g.	Cal...	1,000,000	100,000	10					12,500	Feb..	1898	.12½
97	Portland, g.	Colo..	3,000,000	3,000,000	1	*				1,283,000	Feb..	1898	.01
98	Princess, g.	Colo..	1,000,000	1,000,000	1					45,000	Feb..	1897	.00½
99	Quincy, c.	Mich.	2,500,000	100,000	25	*				9,770,000	Feb..	1898	3.00
100	Rambler-Cariboo	B. C..	1,000,000	1,000,000	1					40,000	April.	1897	.02
101	Raven, g.	Colo..	1,500,000	1,500,000	1					10,000	Jan..	1898	.01
102	Reco, s. l.	B. C..	1,000,000	1,000,000	1					287.500	Jan..	1898	.10
103	Running Lode, g. s. l.	Colo..	1,000,000	1,000,000	1	*				27,000	June.	1893	.00⅕
104	Sacramento, g.	Utah.	5,000,000	1,000,000	5					32,000	Feb..	1898	.00
105	St. Joseph, l.	Mo...	2,500,000	250,000	10						Dec..	1897	.15
106	Santa Rosalia, g. s.	Cal...	100,000	100,000	1					125,000	Feb..	1898	.10
107	Silver King, g. s. l.	Utah.	3,000,000	150,000	20	3,000	Jan..	1897	.02	1,350,000	Feb..	1898	.25
108	Slocan Star.	B. C..	1,000,000	2,000,000	0.50					350,000	Mar..	1897	.05
109	Small Hopes, s.	Colo..	5,000,000	250,000	20	*				3,275,000	Mar..	1896	.10
110	Smuggler Union, g. s.	Colo..	5,000,000	50,000	100					150,000	Oct..	1896	1.00
111	South Swansea, s. l.	Utah.	150,000	150,000	1					74,960	Dec..	1897	.05
112	§Standard Cons., g. s.	Cal...	20,000,000	200,000	100					5,637,940	Oct..	1897	.10
113	Swansea, s. l.	Utah.	500,000	100,000	5					81.500	Feb..	1898	.05
114	Tamarack, c.	Mich.	1,500,000	60,000	25					5,130,000	Dec..	1897	3.00
115	Tom Boy, g.	Colo..	2,000,000	200,000	10	*				410,000	Mar..	1896	.20
116	Union, g.	Colo..	1,250,000	1,250,000	1					73,000	June.	1896	.01
117	Union Leasing	Colo..	500,000	500,000	1					340,000	July..	1895	.04
118	Utah	Utah.	1,000,000	100,000	10	*				177,000	Dec..	1897	.01
119	Victor, g.	Colo..	1,000,000	200,000	5	*				805,000	Nov..	1897	.20
120	War Eagle	B. C..	500,000	500,000	1	32,500	Dec..	1894		187,000	Oct..	1896	.06
121	Western Mine Enterp.	Mont.	500,000	500,000	1	*				48,680	Jan..	1898	.20
122	Whitewater.	B. C..	625,000	125,000	5					154,000	Jan..	1898	.25

NON-DIVIDEND-PAYING MINES.

	Name and Location of Company.		Capital Stock.	Shares. No.	Shares. Par Val	Assessments. Total Levied.	Assessments. Date and Amount of Last.		
1	Ada Cons., s. l.	Utah.	$100,000	100,000	$1	$3,333	Nov..	1895	.01⅓
2	Alamo, g. c. i.	Utah.	125,000	125,000	1	937	Mar..	1898	.00¾
3	Alliance, g. s. l	Utah.	100,000	100,000	1	200,000	Dec..	1895	.10
4	Alpha Cons., g. s.	Nev..	10,500,000	105,000	100	274,500	Mar..	1898	.05
5	Alta, s.	Nev..	10,080,000	108,000	100	3,615,760	Jan..	1898	.10
6	American Quartz, g.	Cal...	1,000,000	100,000	10	1,000	Feb..	1897	.01
7	Anchor, g. s. l.	Utah.	1,500,000	150,000	10	560,000	Aug..	1893	.20
8	Andes, g.	Nev..	10,000,000	100,000	100	280,000	Oct..	1897	.10
9	Baliol, g.	Cal...	1,000,000	100,000	10	‖ 55,000	Mar..	1898	.30
10	¶Belcher, s. g.	Nev..	10,400,000	104,000	100	1,369,620	Dec..	1897	.20
11	Belle Isle.	Nev..	10,000,000	100,000	100	240,271	July..	1896	.10
12	Best & Belcher, g. s.	Nev..	10,080,000	100,800	100	2,559,346	Dec..	1897	.25
13	Bogan.	Utah.	1,250,000	125,000	10	26,875	Dec..	1897	.01⅛
14	Brunswick Cons., g.	Cal...	500,000	500,000	1	160,000	July..	1897	.03
15	Bullion, s. g.	Nev..	1,000,000	100,000	100	3,055,000	Jan..	1898	.05
16	Burlington, g. s.	Cal...	10,000,000	100,000	100	3,000	May..	1896	.03
17	Butte & Boston Con., c	Mont.	2,000,000	200,000	10				
18	Centennial, c.	Mich.	2,000,000	80,000	25	460,000	Mar..	1898	3.00
19	Central Eureka, g.	Cal...	4,000,000	400,000	10	60,000	Jan..	1898	.01
20	Central North Star, g.	Cal...	1,000,000	100,000	10	10,000	July..	1893	.10
21	Challenge Cons, s, g.	Nev..	5,000,000	50,000	100	310,000	Jan..	1898	.10
22	Chollar, g. s	Nev..	11,200,000	112,000	100	2,088,800	Feb..	1898	.20
23	¶Chrysolite, s. l.	Colo..	10,000,000	200,000	50	*			
24	Cleveland Cliffs, i.	Mich.	5,000,000	50,000	100	*			
25	¶Confidence, g. s.	Nev..	2,496,000	24,960	100	1,659,438	Mar..	1898	.30
26	Cons. Imperial, g. s.	Nev..	5,000,000	50,000	100	2,083,000	Nov..	1897	.01
27	Crown Point, g. s.	Nev..	10,000,000	100,000	100	3,025,000	Dec..	1897	.20
28	Dalton, s. l.	Utah.	2,500,000	500,000	5	5,000	Dec..	1897	.00½
29	Denver City, s.	Colo..	5,000,000	500,000	10	*			
30	Eagle, g. s.	Cal...	500,000	100,000	5	5,000	Dec..	1896	.05
31	Eagle, g. s.	Ore..	1,000,000	100,000	10	4,500	Dec..	1897	.01⅓
32	Emerald.	Utah.	300,000	300,000	1	1,000	Dec..	1897	.00½
33	¶Enterprise, g.	Colo..	800,000	800,000	1				
34	¶Eureka Cons., g. s. l.	Nev..	1,000,000	50,000	20	567,500	Feb..	1897	.25
35	Eureka Con. Drift, g.	Cal...	500,000	500,000	1	165,000	Oct..	1897	.03
36	Exchequer, g. s.	Nev..	10,000,000	100,000	100	730,000	Dec..	1897	.05
37	Far West, g. s.	S. D..	1,250,000	250,000	5	42,125	Jan..	1897	.003
38	Favorite, g.	Colo..	1,200,000	1,200,000	1	*			
39	Four Aces.	Utah.	250,000	250,000	1	5,000	Mar..	1898	.01
40	Free Coinage, g.	Colo..	1,000,000	1,000,000	1	*			
41	Gold Belt, g. s.	Utah.	500,000	500,000	1	3,012	July..	1896	.00⅛
42	Golden Age, g.	Colo..	1,000,000	1,000,000	1	*			
43	Golden Dale, g.	Colo..	2,000,000	2,000,000	1	*			
44	Golden Fleece Grav. g	Cal...	130,000	130	1000	56,260	Mar..	1897	2.00
45	Gold King, g.	Colo..	1,000,000	1,000,000	1	*			
46	¶Gold Rock, g.	Colo..	1,000,000	1,000,000	1	*			
47	Gold Standard, g.	Colo..	1,000,000	1,000,000	1	*			
48	Gould & Curry	Nev..	10,800,000	108,000	100	4,893,600	Dec..	1897	.20
49	¶Hale & Norcross, g.s.	Nev..	11,200,000	112,000	100	5,798,000	Jan..	1898	.10
50	Hidden Treas., g. s.	Cal...	20,000	20,000	1	1,000	Nov..	1893	.05
51	Horse Shoe Bar Cons.	Cal...	6,000,000	60,000	100	76,800	Feb..	1898	.10
52	Idaho Co., Ltd., g.	Idaho	100.000	1,000	100	*			
53	Idlewild, g.	Cal...	1,000,000	100,000	10	*			
54	¶Iron Silver, s.l.	Colo..	10,000,000	500,000	20	*			
55	Jackson, l.	Mich.	300,000	12,000	25	*			
56	Jupiter, g.	Cal...	2,000,000	20,000	100	80,000	Feb..	1898	.20
57	Justice, g. s. c.	Colo..	500,000	500,000	1	*			
58	Kentuck Cons., s.	Nev..	10,500,000	105,000	100	130,000	Dec..	1897	.05
59	Keystone, g.	Colo..	1,500,000	1,500,000	1	*			
60	Lacrosse, g.	Colo..	1,000,000	100,000	10	*			
61	Little Pittsburg	Utah.	2,000,000	400,000	5	14,000	Dec..	1897	.00½
62	Lucky Bill	Utah.	300,000	120,000	2.50	52,800	Oct..	1897	.01¼
63	Marguerite, g.	Cal...	500,000	50,000	10	55,000	Dec..	1897	.10
64	Mayflower, g	Colo..	1,000,000	1,000,000	1	*			
65	Merced, g.	Cal...	1,500,000	100,000	15	200,000	July..	1896	2.00
66	Mexican, g. s.	Nev..	10,080,000	100,800	100	3,139,520	Feb..	1898	.15
67	Monarch, g.	Colo..	1,000,000	1,000,000	1				
68	Montreal	Utah.	2,500,000	250,000	10	5,250	Nov..	1897	.00¾
69	¶Mt. Diablo s.	Nev..	5,000,000	50,000	100	145,000	Nov..	1896	.10
70	New Gold Hill.	N. C..	1,750,000	350,000	5				
71	New Viola, s. l.	Idaho	750,000	150,000	5	*			
72	North Banner, g. s.	Cal...	1,000,000	100,000	10	21,794	Oct..	1896	.02
73	¶North Belle Isle, s.	Nev..	10,000,000	100,000	100	523,074	July..	1896	.10
74	Northern Light, g.	Utah.	2,000,000	400,000	5	40,000	Mar..	1898	.10
75	Occidental Cons., g.s.	Nev..	10,000,000	100,000	100	503,652	Feb..	1898	.10
76	Ophir, g. s.	Nev..	10,000,000	100,000	100	4,660,840	Mar..	1897	.25
77	Opohonga.	Utah.	200,000	100,000	2	500	Dec..	1897	.00½
78	Original Keystone, s.	Nev..	10,000,000	100,000	100	250,000	Mar..	1892	.10
79	Oro Cache, g. s.	S. D..	1,250,000	250,000	5	6,250	July..	1893	.00½
80	Overman, g. s.	Nev..	1,152,000	115,200	100	4,157,760	Mar..	1898	.05
81	Peer, s.	Ariz..	10,000,000	100,000	100	215,000	July..	1894	.05
82	Peerless, s.	Nev..	10,000,000	100,000	100	410,000	July..	1894	.05
83	Pine Hill, g.	Cal ..	1,000,000	100,000	10	30,000	July..	1897	.05
84	Potosi, g. s.	Nev..	11,200,000	112,000	100	2,094,400	Mar..	1898	.30
85	Puritan, g, s.	Colo..	1,500,000	150,000	10	*			
86	¶Quicksilver, pref., q.	Cal ..	4,300,000	43,000	100	*			
87	¶Quicksilver, com. q.	Cal ..	5,700,000	57,000	100	*			
88	Quincy, c.	Colo..	3,000,000	300,000	10	*			
89	Red Mountain, s.	Colo..	300,000	60,000	5	22,500	Mar..	1891	.12½
90	Rescue, g.	Utah.	100,000	10,000	10	3,000	July..	1897	.10
91	Reward, g.	Cal...	64,000	64,000	1	61,120	Mar..	1898	.02
92	Ridge, c.	Mich.	500,000	20,000	25	239,939	Feb..	1897	1.00
93	St. Mary, c.	Mich.	1,000,000	40,000	25	4,000	July..	1895	.05
94	Savage, g. s.	Nev..	11,200,000	112,000	100	1,118,600	Feb..	1898	.20
95	Seg. Belcher & M., g.s.	Nev..	10,000,000	100,000	100	350,000	Nov..	1897	.05
96	Sevier, g. s.	Utah.	1,250,000	250,000	5	50,000	April.	1897	.04
97	Sierra-Nevada, g. s.	Nev..	10,000,000	100,000	100	7,026,910	Feb..	1898	.20
98	Silver Age, g. s. l.	Colo..	2,000,000	200,000	10	*			
99	Silver Hill, s.	Nev..	10,800,000	108,000	100	1,998,000	Oct..	1897	.05
100	¶Silver King, s.	Ariz..	10,000,000	100,000	100	279,858	June.	1897	.25
101	Silver Queen, c.	Ariz..	5,000,000	200,000	25	*			
102	Silver State, g.	Colo..	700,000	700,000	1	*			
103	Silver State, s. g. l.	Utah.	100,000	100,000	1	1,000	Sept..	1897	.00½
104	Siskiyou Con., s.	Cal ..	2,000,000	200,000	10	44,000	June.	1896	.01
105	South Fork Con.	Utah.	50,000	50,000	1	5,000	Mar..	1898	.01
106	Sunbeam Cons.	Utah.	250,000	250,000	1	16,875	Mar..	1898	.00½
107	Tecumseh, c.	Mich.	1,000,000	40,000	25	40,000	July..	1897	1.00
108	¶Temonj, g.	Colo..	1,000,000	1,000,000	1				
109	Tetro	Utah.	300,000	300,000	1	15,000	June.	1897	.01
110	Tombstone, g. s. l.	Ariz..	12,500,000	500,000	25	*			
111	Tornado Con., g. s.	Nev..	100,000	100,000	1	*			
112	Union Cons., g. s.	Nev..	10,000,000	100,000	100	2,580,000	Jan..	1898	.15
113	Utah Cons., s.	Nev..	10,000,000	100,000	100	450,722	Jan..	1898	.05
114	Victory, g. s.	S. D..	1,250,000	250,000	5	2,625	Nov..	1896	.00¼
115	Waterloo, g.	Cal...	2,000,000	200,000	10	30,000	Aug..	1893	.15
116	West Granite Mt., s.	Mont.	500,000	100,000	5				
117	Wolverine, c.	Mich.	1,500,000	60,000	25	180,000	Mar..	1895	1.00
118	Work, g.	Colo..	1,250,000	1,250,000	1				
119	World, g.	Colo..	1,500,000	1,500,000	1	*			
120	Yellow Jacket, g. s.	Nev..	12,000,000	120,000	100	6,144 000	Oct..	1896	.25
121	Yellow Jacket	Utah.	300,000	300,000	1	1.500	Dec..	1897	.00⅕

G., Gold. S., Silver. L., Lead. C., Copper. B., Borax. * Non-assessable. †The Deadwood previously paid $275,000 in eleven dividends and the Terra $75,000.
‡Previous to the consolidation in August, 1884, the California had paid $31,320,000 in dividends and the Cons. Virginia $42,390,000. ‖ Dividends paid since consolidation.
§Bodie, Bulwer and Mono transferred to Standard Cons., January, 1897. Previous to consolidation Bodie paid $1,677,572, Bulwer paid $190,000, and Mono $12,500.
¶ Dividends have not been paid in several years.
NOTE.—This table is corrected up to March 1. Correspondents are requested to forward changes or additions so as to reach us before the end of each month.

RARE ELEMENTS, CHEMICALS AND MINERALS—CURRENT PRICES.

NOTE.—This table is revised up to February 21st. Readers of the ENGINEERING AND MINING JOURNAL are requested to report any corrections needed, or to suggest additions which they may consider advisable.

CHEMICALS AND MINERALS.

These quotations are for wholesale lots in New York unless otherwise specified, and are generally subject to the usual trade discounts.

	Cust. Meas.	Price.
Abrasives—		
Carborundum, f.o.b. Niagara Falls grains	lb.	$0.14
Powders	"	.08
Corundum, N. C.	"	.07@.10
Chester	"	.04½@.05
Emery, Turkish flour	"	.03@.03½
Grains	"	.04½@.05½
Naxos flour	"	.03@.03½
Grains	"	.04½@.05½
Chester flour	"	.03@.03½
Grains	"	.04½@.05½
Peekskill flour	"	.01½
Grains	"	.02½
Crude, Kuluk, best	lg. ton	$18.50
Levant, "	"	22.00
Naxos (Greek) best	"	25.00
Pumice Stone, powdered	lb.	.01@.02
Lump	"	.04@.12
Rottenstone, ground	"	.03¼@.03½
Lump, according to quality	"	.05½@.12
Rouge	"	.17@.30
Tripoli, prepared	sh. ton.	12.00
Acids—		
Acetic, ch. pure, 30%	lb.	.06½@.0
30% pure	"	2.65@.03
36% U. S. P.	"	.03½@.04
Glacial, 99.5%	"	.21@.23
Benzoic, English	oz.	.06¼@.06½
German	lb.	.49
Boracic, Cal. pure cryst.	"	.08
Powdered	"	.08½
Carbolic, cryst. in drums	"	.16@.17
Chromic, com'l	"	.25
Pure	"	.35
Chem. pure	"	1.75
Hydrochloric, 20°	100 lbs.	.90
Hydrofluoric, 30%	lb.	.03@.04½
48%	"	.05@.06
Pure	"	.10@.12
Chem. pure	"	1.00
Phosphoric, English, st.p	"	.24
Sulphuric, c. p. (in cbys.)	"	.10@.12
Tartaric, cryst.	"	.31½@.32
Powder	"	.32@.32½
Alcohol—94%	gal.	2.25@2.29
Refined wood, 95%	"	.75
97%	"	.80
Purified	"	1.20@1.50
Alum—		
Lump	100 lbs.	1.65
Ground	"	1.75
Chrome, com'l	"	3.25
Aluminum—		
Oxide, com'l	lb.	.60
Pure	"	.80
Chem. pure	"	1.00
Hydrated	"	.50
Sulphate, com'l	"	.01¼@.01¾
Ammonia—		
Aqua (in carboys), 16°	"	.03¼
18°	"	04@.05
20°	"	.05¼@.05¾
26°	"	.06¼@.06¾
Ammonium—		
Bromide, pure	"	.52@.53
Carbonate	"	.07¼@.07½
Muriate, gran. (100%)	"	.03½
Lump	"	.07¾@.08
Gray	"	.04½
Nitrate, white, pure (99%)	"	.09
Antimony—Glass	"	.30@.40
Needle, lump	"	.04¾@.05½
Powdered	"	.05¼@.06
Oxide	"	.08¼@.16
Sulphureted	"	.16
Argols—30%	"	.04@.06
80%	"	.16@.16¾
Arsenic—White, powd.	"	.04¾@.05½
Red	"	.07½@.08½
Asbestos—		
Board	"	.02¾
Fiber, long	sh. ton	20.00
Medium	"	30.00@40.00
Short	"	16.00@25.00
Pipe covering, magnesia fib., av. size	sq. ft.	.11
Asphaltum—		
Cuban, prime	lb.	.04@.05
Hard	"	.01¼@.01½
Trinidad, refined	"	.01½@.02
Bermuda, refined, f.o.b., South Amboy, N.J.	sh. ton	45.00
Egyptian, refined	lb.	.05½@.06½
Gilsonite, Utah, ordinary	sh. ton	35.00
Select	"	60.00
Barium—Carbonate, lump, 92@94%	lg. ton	25.25
96@98%	"	29.00
Precipitated, 98%	sh. ton	88.00@40.00
Chem. pure	lb.	.10
Chloride, com'l	100 lbs.	1.60@2.00
Chem. pure cryst	lb.	.05
Chlorate	100 lbs.	.29
Nitrate	lb.	.05½@.06
Nitrite, com'l	"	.05⅞
Oxide, com'l, hydrated, cryst.	"	.18@.22
Hydrated, pure cryst.	"	.25
Pure, powd.	"	.27
Chem. pure	"	1.50
Anhydrus, com'l pure	"	.50
Sulphate (Blanc fixe)	"	.02¼@.02¾
Barytes—		
Crude, No. 1	sh. ton	9.00@10.00
No. 2	"	8.00@8.25
No. 3	"	7.75@8.00
American, floated	"	15.00@18.00
Foreign, floated	"	18.00@20.00
Bauxite—Georgia, f.o.b. cars, first grade	lg. ton	3.27@3.50
Second grade	"	2.50@2.62
Benzole— 90%	gal.	1.00@1.10
Bismuth—Oxide, hydr.	lb.	2.65
Bitumen	"	.04½
Bone Ash	"	.02¾@.03½
Borax—		
Cal., refined, cryst.	lb.	.07
Lump	"	.06¾@.07
Bromine—		
Com'l, at works	lb.	.45
Cadmium	"	3.00
Sulphide	"	3.75@4.00
Calcium—		
Acetate, brown	100 lbs	1.25@1.50
Gray	"	1.75@2.00
Pure white	lb.	.08@.09
Carbonate, ppt.	"	.10
Chem pure	"	.75
Phosphate, ppt.	"	.20
Sulphite	"	.05
Carbide, prepared	"	.01@.03
Cement—		
Portland, Am., 400 lbs.	bbl.	1.80@2.00
Foreign	"	1.75@2.50
"Rosendale," 300 lbs.	"	.75
Sand cement, 400 lbs.	"	1.85@1.95
Slag cement, imported	"	1.65
Ceresine—Orange	lb.	.11
Yellow	"	.10@.11
White	"	11½@.13
Chalk—		
Com'l, lump	sh. ton	2.00@2.25
English, ppt.	lb.	.04@.06
French, lump	100 lbs.	.30
Powdered	"	.35
Charcoal—		
Animal	lb.	.02@.03¼
Chlorine—		
Liquid	"	.25
Chrome Ore—		
(50% chrome) ex ship	lg. ton	21.25@23.50
Clay, China—Delivered,		
Low grade	sh. ton	13.00
Medium grade	"	15.00
Best grade	"	17.00
Fire, ground	lg. ton	4.00@5.00
Cobalt—		
Carbonate	lb.	1.50
Nitrate	"	1.30
Oxide, black	"	1.60@1.76
Gray	"	2.25
Smalt	"	.30
Chem. pure	"	5.00
Sulphate	"	.85
Copperas	100 lbs.	.50@.57½
Copper—		
Acetate, com'l	lb.	.16@.20
Carbonate	"	.16
Chloride	"	.25
Nitrate, crystals	"	.35@.40
Oxide, black	"	.15@.20
Ppt. pure	"	.40
Red	"	.16
Ppt, pure	"	.40
Sulphate, com'l	"	.03½@.03¾
Chem. pure	"	.10
Explosives—		
Judson R.R. powder, by carload	"	.10
"Rackarock"	"	.25
Dynamite, (40% nitroglycerine)	"	.20
(50% nitro-glycerine)	"	.24
(60% nitro-glycerine)	"	.28
(75% nitro-glycerine)	"	.36
Glycerine, for nitro (32 2-10° Be.)	"	.11
Nitro-Benzole	"	.14@.15
Feldspar—		
Ground	sh. ton	7.00@7.75
Flint—(See Silica).		
Fluorspar — Domestic, lump	"	7.00
Gravel	"	6.00@7.00
Crushed	"	7.50
Ground	"	10.00@12.00
Extra fine ground	"	11.00@13.50
Foreign, lump	"	8.00@12.00
Ground	"	11.50@14.00
Fuller's Earth—		
Lump	100 lbs.	.75
Powdered	"	.80@1.00
Graphite— (See Plumbago).		
Gypsum—		
American, ground	sh. ton	4.25
English	"	14.00
French	"	16.00
Infusorial Earth—	"	20.00@32.00
Iodine—		
Crude	lb.	2.55
Resublimed	"	3.00@3.05
Iron—		
Chromate, powdered	"	.03@.10
Muriate	"	.05
Nitrate, com'l	"	.01@.01½
True	"	.03½@.04½
Oxide	"	.02@.12
Scale	"	.01@.03
Sulphide (antimony slag)	"	.05@.06
Kaolin— (See Clay, China).		
Kryolith	"	.08½
Lead—Acetate. White, broken	"	.05½@.06
Com'l, broken	"	.05½@.05¾
Chromate	"	.30@.30
Nitrate, com'l	"	.05½@.06
C. P.	"	.35
Lime—		
Building, about 250 lbs.	bbl.	.75@1.00
Fertilizing	"	.50@.75
Chemical marble	"	1.00@1.25
Hydrated	lb.	.02@.03
Flour	"	.01¼
Magnesite—		
Crude, lump 94%	sh. ton	7.00@7.50
Calcined	"	14.00@25.00
Powdered	"	25.00@30.00
Calcined	"	30.00@35.00
Magnesium—	Cust. Meas.	Price.
Metallic, ingots (Ger).	kg.	5.95@6.90
Powdered (Ger.)	"	6.90
Ribbon or wire (Ger.)	"	9.52
Carbonate	lb.	.01¾@.02
Chloride, com'l	"	.05
Manganese—		
Ore, 50%	unit	.21@.22½
Manganese—		
Crude, powdered, 70@75% binoxide	lb.	.01¼@.01½
75@85% binoxide	"	.01½@.02½
85@90% binoxide	"	.02½@.03¼
90@95% binoxide	"	.03¼@.05½
Carbonate	"	.16@.20
Chloride	"	.04
Sulphate, powdered	"	.25
Pure cryst.	"	.60
Marble—Flour	sh. ton	8.00
Mercury—		
Bichloride	lb.	.57@.59
Bisulphate	"	.50
Red, ppt.	"	.76@.78
White, ppt.	"	.81@.83
Mica—Ground	"	.03@.04½
Sheets, according to size and quality.		
Mineral Wool—Rock	"	.01¼@.01¾
Monazite—		
92%	sh. ton	140.00
Nickel—		
Oxide, black, No. 1	lb.	.90
No. 2	"	.45
Green, No. 1	"	.80
No. 2	"	.45
Oils, Mineral—Black, reduced 29 gr., 25@30%	gal.	.06½@.07
Black reduced 29 gr. 15 cold test	"	0 .0½@.11½
Black reduced 29 gr. zero	"	.09@.11½
Black reduced summer	"	.06@.06½
Smith's Ferry, 33@34 gr.	"	.07½@.08½
WestVirginia, nat'l 29 gr	"	.22@.24
Cylinder, dark steam ref	"	.07½@.12½
Dark filtered	"	.10½@.15½
Light filtered	"	.12½@.15
Extra cold test	"	.20½@.24½
Gasoline, 86°	bbl.	13.00@14.00
88°	"	15.00@16.00
90°	"	18.00@19.00
Neutral filtered, lemon, 33@34 gr.	gal.	.12½@.18
White, 33@34 gr.	"	.20½@.22½
Wool grade, 32 gr.	"	.10½@.14
Naphtha, crude, 68@72°	bbl.	5.50
70°	"	6.00
Petroleum, refined, bulk	"	2.90
Paraffine, high viscosity	gal.	.20@.26
23½@24 gr	"	.08¾@.09
28@32 gr	"	.06½@.06¾
25 gr	"	.07¾@.08
Red No. 1	"	.11@.11½
No. 2	"	.10½
Ozokerite—		
Imported	lb.	.07½@.08½
Paints and Colors—		
Benzine, Sumatra	"	.35@.40
Marbled	"	.27@.28
Chrome, green	"	.05@.15
Yellow	"	.10@.12
Lampblack—Com'l	"	.03@.05
Refined	"	.08@.10
Calcined	"	.12@.20
Fine spirit	"	.20@.30
Litharge, Am. powd.	"	.05¼@.05½
Foreign	"	.06¼@.09¾
Metallic, brown	sh. ton	18.00@20.00
Red	"	18.00@20.00
Ocher, American	sh. ton	8.00@17.00
Foreign, washed	lb.	.01@.05
Orange mineral, Am.	"	.06¾@.07
Foreign	"	.06¾@.10⅝
Red lead, American	"	.05¼@.05½
Foreign	"	.06½@.07
Shellac, as per quality	"	.15@.24
Turpentine, spirits	gal.	.30¼@.30¾
Ultramarine	lb.	.03@.25
Vermilion, Amer. lead.	"	.14@.16
Quicksilver	"	.54@.55
Chinese	"	.70@.75
English, imported	"	.60@1.20
Artificial	"	.12@.20
White lead, Am., dry	"	.05@.05½
In oil	"	.05½@.05¾
English, in oil	"	.07½@.08¼
Whiting, common	100 lbs.	.35@.40
Gilders	"	.45@.50
Zinc white, Amer., dry.	lb.	.03¾@.04½
In oil	"	.05¾@.06¼
Foreign, red seal	"	.06@.07
Green seal	"	.07@.08¼
Pearl Ash	lb.	.04@.05
Pitch—Coal tar	bbl.	1.80@1.85
Platinum—		
Chloride	oz.	9.00
Plumbago — American, pulverized, f. o. b., Providence, R. I.	sh. ton	20.00@40.00
Lump	"	10.00
German, lump	100 lbs.	.95
Pulverized	lg. ton	16.50
Ceylon, crude	lb.	.01¼@.04½
Pulverized	"	.02@.05
Potash—		
Caustic	"	.04½@.06
Potassium—		
Metallic, in Germany	kg.	17.85
Acetate, com'l.	lb.	.13@.15
Bicarbonate cryst.	"	.09@.09½
Bichromate	"	.10@.10¼
Bromide	"	.44@.45
Carbonate	"	.04@.05½
Cyanide (98@100%)	"	.28@.30
Nitrate, double refined.	"	.04@.05
Chem. pure cryst	"	.05@.07
Permanganate, pure cr.	"	.18@.18¼
Chem. pure	"	.34
Sulphide, com'l	"	.16
Chem. pure	"	1.00
Pyrites—	Cust. Meas.	Price.
Rough kln, Am., iron (50%)—(unbroken)	unit	.09@.11½
Smalls	"	.08@.10
Spanish, high grade, cupreous	"	.10½@.12
Spanish, high grade, non-cupreous	"	.12@.13
Iron, smalls	"	.11@.12
Washed pyrites	"	.09@.11
Quartz—(See Silica).		
Salt—		
Domestic	sh. ton	4.40@5.20
Scheelite—	oz.	9.00
Saltpeter—		
Crude	lb.	.03⅛@.03¼
Silica—		
Water groundsh	ton	12.00
Ground quartz	"	7.00@8.00
Lump quartz	"	3.00@4.00
Silver—		
Chloride	oz.	.60@.90
Nitrate	"	.36@38
Oxide	"	.85@1.10
Slate—		
Ground	lb.	.02@.03
Sodium—Metallic	"	.75
Acetate, com'l	"	.03¼@.05¾
Chem. pure	"	.05@.05¾
Bichromate	"	.08¼@.08¾
Bromide	"	.47@.48
Carbonate	"	.01
Nitrite	"	.07½@.07¾
Phosphate	"	.02¾@.03½
Silicate, pure powder	"	.04@.10
Com'l, lumps	"	.05
Sulphate	100 lbs.	.55@.65
Sulphide	lb.	.02@.03
Tungstate, com'l (retail)	"	.35
Pure	"	.50
Strontium—		
Carbonate, precipitate	"	.13@.14
Nitrate	"	.07½@.07¾
Roll	"	1.60
Sublimed	"	1.90
Pure, precipitated	lb.	.12
Chloride	"	.20@.35
Sulphur—		
Flour	100 lbs.	1.65@1.75
Talc—American, No. 1	sh. ton	15.75@16.25
No. 2	"	11.50@12.00
French	100 lbs.	.75@1.25
Italian	"	1.50
Tellurium—		
Metallic, ch. pure (Ger.)	100 grms.	13.09
Powder	"	9.52
Tin—Chloride	lb.	.11@.13
Crystals	"	.10¼@.10½
Oxide, white, ch. pure	"	.20½@.25
Titanite of Alumina—sh. ton		
Uranium—Oxide	lb.	2.30
Zinc—Metallic, ch. pure	"	.06¾
Carbonate	"	.18
Chloride, gran	"	.05¾@.06
Dust	"	.06¾.08
Sulphate	"	.02@.02½

THE RARE ELEMENTS.

Prices given are at makers' works in Germany, unless otherwise noted.

	Cust. Meas.	Price.
Argon—Spectrum (N.Y.)	tube.	$5.00
Barium—Amalgam	grm.	1.19
Electrol	"	5 71
Beryllium—Powder	"	5.95
Crystals	"	9.04
Boron—Amorphous, pure	"	.59
Crystals, pure	"	1.43
Calcium—Electrol	"	4.28
Cerium—Nitrate (N. Y.)	oz.	.25
Chromium—Fused	kg.	7.14
Com'l pure powder	"	1.90
Chem. pure cryst	grm.	.19
Cobalt—(98@99%)	kg.	5.47@5.71
Pure	"	30.94
Didymium—Powder	grm.	3.81
Erbium	"	3.09
Gallium	grain	6.15
Germanium—Powder	grm.	33.32
Fused	"	35.70
Glucinum—Powder	"	5.95
Crystals	"	9.04
Helium—		
Spectrum (N. Y.)	tube.	6.00
Indium	grm.	4.05
Iridium—	"	1.19
Lanthanum—Powder	"	4.28
Electrol, in balls	"	9.04
Lithium	"	2.38
Molybdenum—Com'l (95%)	kg.	2.86
Fused, electrol	100 grms.	15.47
Niobium	grm.	3.87
Osmium	"	.83
Palladium	"	.95
Rhodium	"	3.57
Rubidium—Pure	"	4.76
Ruthenium	"	1.55
Selenium—Com'l powder	kg.	26.18
Sublimed powder	"	35.70
Sticks	"	28.56
Silicon—Amorphous	100 grms.	7.14
Crystals, pure	"	13.09
Strontium—Electrol	grm.	6.19
Tantalum—Pure	"	3.57
Thallium	kg.	29.75
Thorium (N. Y.)	lb.	10.00
Titanium	grm.	.71
Uranium—Fused	"	.60
Powder	"	.48
Vanadium—Fused	"	1.43
Wolfram—		
Com'l (95@98%)	kg.	1.43
Fused	100 grms.	15.47
Powder, pure	kg.	4.76
Yttrium	grm.	3.33
Zirconium—Com'l	kg.	119.00
Pure	grm.	.71

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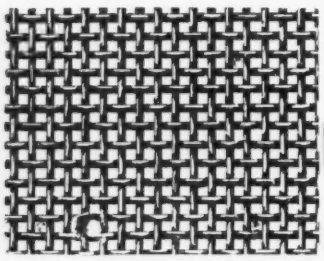

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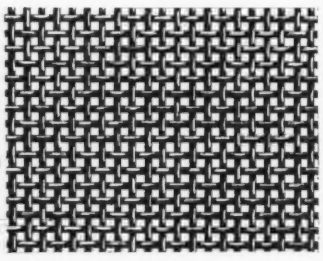

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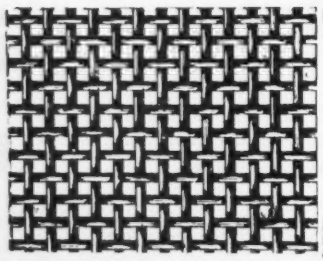

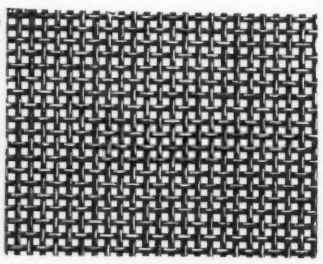

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Allis, E. P., Co., Milwaukee.
Union Gas Engine Co., San Francisco.
Weber Gas and Gasoline Engine Co., Kansas City, Mo.

Gauges, Recording, Etc.

Bristol, The, Co., Waterbury, Conn.

Gearing.

Besly, C. H., & Co., Chicago, Ill.
Chester Steel Casting Co., Philadelphia.
Denver, The, Eng. Works Co., Denver.
Fraser & Chalmers, Chicago, Ill.
Link-Belt Machinery Co., Chicago, Ill.

Grease, Graphite, Etc.

Besly, C. H., & Co., Chicago, Ill.
Dixon, J., Crucible Co., Jersey City, N. J.

Grease Cups.

Besley & Co., C. H., Chicago, Ill.
Detroit Lubricator Co., Detroit, Mich.
Powell Wm. Co., Cincinnati, O.

Grinding Mill Machinery.

Sturtevant Mill Co., Boston, Mass.

H

Hoisting Machinery.

Bacon, E. C., New York, N. Y.
Bullock, The, M. C., Mfg. Co., Chicago.
Colorado, The, Iron Works Co., Denver.
Davis, F. M., Iron Works Co., Denver.
Denver Engineering Works Co., Denver.
General Electric Co., Schenectady, N. Y.
Hendrie & Bolthoff Mfg. Co., Denver.
Hunt Co., C. W., N. Y.
Jeffrey Mfg. Co., Columbus, O.
Lidgerwood Mfg. Co., New York, N. Y.

POSITIONS VACANT

Free Advertising.

Inquiries from employers in want of Superintendents, Engineers, Metallurgists, Chemists, Mine or Furnace Foremen, or other assistance of this character, will be inserted in this column WITHOUT CHARGE, whether subscribers or not.

The labor and expense involved in ascertaining what positions are open, in gratuitously advertising them and in attending to the correspondence of applicants, are incurred in the interest and for the *exclusive* benefit of *subscribers* to the ENGINEERING AND MINING JOURNAL.

☞ **Applicants should inclose the necessary postage to insure the forwarding of their letters.**

1565 WANTED—A MAN TO MAKE plans and estimates on the cost of a five-ton alum plant in the South. State qualifications, references, etc. Address ALUM, ENGINEERING AND MINING JOURNAL.

1570 WANTED SALESMAN, TECHnical graduate, as expert on hoisting machinery, rock drills, compressors and exploring outfits. Must have A1 references as to character, experience, etc. Address, with list of references, Box 20, ENGINEERING AND MINING JOURNAL.

1572 WANTED—FIRST-CLASS ASSAYER for Mexico. Must have experience and furnish good references. Salary $150 Mexican money per month and board. Address, giving full particulars, SAN PIEDRO, ENGINEERING AND MINING JOURNAL.

1573 WANTED.—AT ONCE, EXPERienced mining foreman to take charge of sinking two shafts in the Black Hills. Must be qualified to handle men and machinery and familiar with breaking and timbering ground. Address, giving references and stating salary expected, W. E. N., ENGINEERING AND MINING JOURNAL.

1574 WANTED—FOREMAN OR SUPERintendent to erect and take charge of a lead, zinc, wet concentrating mill of about 30 tons capacity, in the East; also look after mine work. Address, with reference, experience and salary expected, A. B. C., ENGINEERING AND MINING JOURNAL.

1575 WANTED—ACID MAKER BY A large Southern fertilizer factory, located in South Carolina. Applicant must be sober, reliable, with good ability to handle labor, burn lead and obtain best yield sulphuric acid. Address, by letter, stating family, salary expected and references, to ACID, ENGINEERING AND MINING JOURNAL.

1576 WANTED—YOUNG MAN, GRADUate technical school, who has had practical experience in cupelling, to go abroad; liberal salary and good opening. Address F. M. W., ENGINEERING AND MINING JOURNAL.

1577 WANTED—TO SECURE THE SERvices of a practical slate expert in the capacity of superintendent or foreman. Address SLATE, ENGINEERING AND MINING JOURNAL.

1578 WANTED AT ONCE—A COMPEtent surveyor and assayer combined; should be able to determine latitude and longitude. Only competent men with excellent testimonials need apply. State salary. Address BRITISH COLUMBIA, ENGINEERING AND MINING JOURNAL.

1579 WANTED—AN EXPERIENCED man to run a cyanide plant in the West, to begin work in June or July. Address CYANIDE, ENGINEERING AND MINING JOURNAL.

1580 WANTED AT ONCE 20 FIRST-class machinists, accustomed to large engine work or heavy machine tools, for night work. Address MACHINISTS, ENGINEERING AND MINING JOURNAL.

1581 WANTED—A COMPETENT BOILERmaker, capable of estimating contract work, to take charge of our boiler shops. Address BOILER, ENGINEERING AND MINING JOURNAL.

1582 WANTED—FIRST-CLASS ERECTing shop foreman. Address FOREMAN, ENGINEERING AND MINING JOURNAL.

1583 EXPERIENCED CATALOGUER TO prepare detailed and illustrated catalogues for manufacturers of electrical apparatus. State education, experience, age, salary expected and give references. Address CATALOGUER, ENGINEERING AND MINING JOURNAL.

1584 WANTED — MACHINERY AND foundry foreman. Must know how to make drawings and estimates on work. Give reference and salary expected. Address MACHINERY FOREMAN, ENGINEERING AND MINING JOURNAL.

SITUATIONS WANTED.

Advertisements for SITUATIONS WANTED will be charged only 10 cents a line.

A THOROUGHLY COMPETENT MACHINist and engineer, speaking English, German and Spanish, age 45, wants position to take charge of machinery and repair plant or erection of plant for mining and milling company, preferably in Spanish America. Best of recommendations from last employers. Address WM. HEUER, Sombrerete, Zacatecas, Mexico. No. 18,187, April 2.

POSITION WANTED AS SUPERINTENDent of copper smelting plant; have thorough knowledge of converting, roasting and smelting, and could build plant for same. Address SMELTER, ENGINEERING AND MINING JOURNAL. No. 18,191, April 30.

A MINING ENGINEER OF MIDDLE AGE, with 15 years' experience in gold mining in all its branches, is open for an engagement. Treatment of low-grade and refractory ores a specialty. Best of references. Address GOLD MINING, ENGINEERING AND MINING JOURNAL. No. 18,190, March 26.

A BLACKSMITH, FIRST-CLASS IN ALL kinds of mine and mill work, from diamond drill setting to the heaviest or most complicated forgings, desires a permanent situation in a healthy locality, where he can have educational advantages for his children. Highest recommendations from employers. Refers to the ENGINEERING AND MINING JOURNAL. Address BLACKSMITH, ENGINEERING AND MINING JOURNAL.

POSITION WANTED IN A DYNAMITE factory. A chemist with 12 years' experience in the manufacture of dynamites—collodion cotton, sulphuric, nitric, chloridic acids, etc.—38, single, speaks English, French, German, Italian. Address A. P., ENGINEERING AND MINING JOURNAL. No. 18,192, April 23.

A TECHNICAL GRADUATE, WITH OVER 10 years' experience in a large lead works as head of the electrolytic silver refining department, chief assayer, etc., desires position. References furnished. Address ARGENTUM, ENGINEERING AND MINING JOURNAL. No. 18,194, March 26.

A MINING ENGINEER, AGE 40, THOROughly competent, large experience in the West, desires management of gold or copper property, or position as traveling expert for parties desiring to invest in mining properties for the purpose of working same. Has personal knowledge of much of the Alaska coast. References. Address W., ENGINEERING AND MINING JOURNAL. No. 18,195, March 19.

ASSAYER AND CHEMIST, YOUNG MAN, some experience, desires position. Address C., ENGINEERING AND MINING JOURNAL. No. 18,196, March 19.

CHEMIST AND ENGINEER OF REPUTAtion, having business capability and experience in manufacture of acids, alkali and phosphates, competent to manufacture and construct, will be open for engagement as manager or superintendent of chemical or phosphate works. Address F. A., ENGINEERING AND MINING JOURNAL. No. 18,197, March 19.

MINING ENGINEER, SEVEN YEARS' EXperience, including mining, milling and concentration, speaks Spanish, desires position as superintendent or assistant with mining or milling company. Reference from present employers. Address ORO, ENGINEERING AND MINING JOURNAL. No. 18,198, April 2.

A COLLIERY MANAGER AND GRADUATE E. M. in charge of large plant desires change; 15 years' practical experience, energetic and progressive, up to date and successful in getting good results. Address COAL, ENGINEERING AND MINING JOURNAL. No. 18,176, April 16.

WANTED — EXPERT DRAUGHTSMAN, general and electrical machines, desires permanent position. Address R. P., ENGINEERING AND MINING JOURNAL.

AN EXPERIENCED MINING ENGINEER and superintendent desires a position; eight years' experience in iron and gold. Best of references. Address A1, ENGINEERING AND MINING JOURNAL. No. 18,200, March 19.

CONTRACTS OPEN.

PUMP.—Bids will be received at once by the Water Commission of the city of DeKalb, Ill., for sinking a well which will be 15 inches in diameter for 200 ft. and 7 inches for 600 or 800 ft. more. Surface of water will be about 70 ft. from the surface of the ground and when pumping 400 gallons per minute it will probably sink to about 180 ft. from the surface. We want a pump which will get the largest quantity of water with the greatest economy of operation.

CAST IRON PIPE.—Sealed proposals will be received by the "Board of Management" of the Department of Public Works, at their office, in the City of St. John, N. B., until Friday, the 1st day of April, 1898, at 12 o'clock, noon:

For the supply of about 3,116 tons of best quality 24 and 12 inch cast iron water pipe, according to specification and drawings prepared by Wm. Murdoch, Esq., C. E., Engineer and Superintendent S. and W. Supply, copies of which specification may be had on application to the director.

Tenders must be made on form furnished by the department.

The board do not bind themselves to accept the lowest or any tender.

Each tender must be accompanied by a certified bank check or deposit of money amounting to five hundred dollars ($500), said amount to be forfeited should the party to whom the pipe is awarded decline to enter into contract; and a further deposit equal to five (5) per centum on the estimated full value of contract at prices named in bid will be required to be made on entering into contract; the deposit to be forfeited should the party receiving the contract refuse to proceed therewith, or fail to complete the work as required by specification and drawings.

STEEL BRIDGE.—Proposals for building the superstructure of a steel highway bridge will be received by the City and Town of Olean, N. Y., at the Council Chamber in said city until 8 o'clock p. m. on Tuesday, the 22d day of March, 1898, at which time and place bids will be publicly opened and read, and the contract awarded as soon thereafter as possible. Each bid must be inclosed in a sealed envelope, indorsed on the outside "Proposal for Bridge," addressed to G. H. Strong, Mayor of Olean, N. Y., and deposited with the City Clerk on or before the above time. Each proposal must be accompanied by a New York draft or certified check, payable without conditions, to C. D. Judd, Treasurer, City of Olean, N. Y., in the sum of $600, without which no bid will be received, and such deposit is to be forfeited to the City and Town of Olean in case of refusal to sign the contract by any bidder to whom it may be awarded. The deposit of unsuccessful bidders will be at once returned to them, but that of the successful bidder will be retained until a satisfactory amount of work has been performed by him under his contract. The right is reserved to reject any or all bids and to award the contract as is deemed best for the interests of the City and Town. Plans, specifications and form of contract may be seen at the office of the Superintendent of Streets, Olean, N. Y., and at the office of Stowell & Cunningham, No. 51 State St., Albany, N. Y.

WATER-WORKS.—Offers will be received by the American Water & Gas Co., 66 Broadway, New York, until April 1st, 1898, for furnishing material and performing labor incident to laying 2,650 ft. of 6-in. cast-iron water pipe, with hydrants, branches, specials, and setting 5 hydrants thereon; 500 ft. of 4-in. cast-iron water pipe with hydrant branches, specials, and setting 1 hydrant thereon, in the village of Palmyra, N. Y. Plans and specifications can be seen at office of the Waterloo Water Company, Waterloo, N. Y.

(*Continued on Page 21.*)

THE ENGINEERING AND MINING JOURNAL

ADVERTISING RATES.
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LANDS AND MINES FOR SALE.

E. HEDBURG, Mining Engineer. JOS. F. BOYD, Mine Operator.

LEAD AND ZINC MINING PROPERTIES

In Joplin, Mo., District, Bought and Sold.

Large Dividend paying properties a specialty. We have had 17 years' experience in the district. Write for illustrated pamphlet. Address

E. HEDBURG & CO., Joplin, Mo.

FOR SALE.

Ten Thousand (10,000) Shares of Alaska Gold Syndicate Co. stock at 50 cents per share. This property is located on Cooks Inlet, Alaska, and the head offices are in New York City. The stock is selling readily at $1.00 per share. This transaction is a thoroughly legitimate one, and fullest possible information will be given to any person wishing to invest.

D. L. WIGGINS,
Ashland, Wis.

FOR SALE,

In Nova Scotia, a valuable property containing Gypsum and Selenite in almost unlimited quantities. Address THOMAS A. SCOTT,

60 Congress St., Boston, Mass.

TELLURIUM FOR SALE.

A considerable supply can be furnished. Bids are asked for. Address TELLURIUM,
ENGINEERING AND MINING JOURNAL.

FOR SALE.

A Salt Works situated in the Kansas Salt Belt. The property is offered to close up an estate. For particulars address P. O. Box 591, Hazelton, Pa.

Canada, Province of British Columbia.

No. 3. IN THE SUPREME COURT.

In the Matter of **O. K. GOLD MINING CO.,**
Limited Liability (Foreign), in Liquidation.

The undersigned Official Liquidator will sell by Tender, subject to ratification by the Court,

The O. K. Mine and Buildings belonging to said Company; also the entire Mining and Milling Plant of said Company, situated on the south slope of O. K. Mountain in Trail Creek Mining Division, about 2½ miles west of Rossland and close to main wagon road and Red Mountain Railway, leading from the City of Rossland, West Kootenay District, British Columbia, to Northport, Washington, distant about 15 miles. The claim is surveyed and Crown granted.

The ore was at first largely free milling. It was originally treated by a five stamp mill, which was superseded by the present 10 stamp mill.

The O. K. Mine has been worked since 1893, and has always been a producer. About 2,472 tons of ore from this mine were milled from January 19, 1897, to June 19, exclusive of several hundred tons of custom work for adjoining mines.

It is most favorably situated in all respects.

The new ten-stamp mill is thoroughly equipped for the economical handling of ore. It is connected with the mine by a 600-foot gravity surface tramway, with 20 wire rope carrying rollers, etc., complete, the elevation of the workings being 200 feet above the mill; one 3-wheel brake with 650 feet ¾-inch steel wire rope; two self-dumping ore cars, 18-inch gauge.

The mill contains two 50 horse-power Standard tubular boilers, each containing 54 12-foot tubes; one 85 horse-power Corliss engine; one 10-stamp mill; one No. 6 Blake crusher; one grisly 4 × 10, 3 × ¾ iron; two Challenge automatic feeders; one overhead crane, with iron track; one 1-ton Weston differential pulley block; one gold retort, with cover, wedges and condenser pipe; one Rand straight line Class C 12 × 18 air compressor, capable of running four drills; one 28 inch × 8 foot air receiver; one No. 7 Miller duplex pump; three 6-foot Fraser & Chalmers Frue vanners; plain belts; one 4-core hydrometric sizer; one Woodbury concentrator; one bumping table; extra amalgamating plates following concentrating table, and one Fraser & Chalmers ore sample grinder, etc.

BUILDINGS.—The principal buildings are: The new mill building, containing 10-stamp mill, but designed and built to accommodate 25 stamps; engine and boiler house, office buildings, mess room, cook house and store room, manager's residence, etc.

DEVELOPMENT WORK.—Comprises three main tunnels, one winze and a number of drifts, shaft down 15 ft., aggregating over 1,500 feet, which is entirely confined to one corner of the property. Two-thirds of the property are as yet unprospected.

Tenders are now invited for the sale of the property as a whole, including the new 10 stamp mill, the mine, four machine drills, and entire plant, machinery and all buildings connected therewith.

The undersigned reserves the right to accept or decline any tender, and to withdraw the property from sale at any time, and the further right to fix a reserve price upon the property, and to make such other conditions as may meet with the sanction of the Court.

The property is open for inspection, and intending purchasers will find it advantageous to make an application for this purpose to the undersigned, at No. 3 Imperial Block, Rossland, B. C., where an inventory can be seen and all further necessary information will be furnished.

RICHARD PLEWMAN,
Official Liquidator.

Telegraphic and Cable Address "PLEWMAN." Use Bedford McNeil's Code.

MISCELLANEOUS WANTS.

SECOND-HAND RAILS.

If you have any Rails which are in good condition to relay—or if only good to be used as scrap—write us we buy both kinds.

ROBINSON & ORR,
No. 419 Wood Street, Pittsburgh, Pa.

WANTED BONDS

of the Canada Consolidated Gold Mining Company dated about 1882. Address

BONDS,
ENGINEERING AND MINING JOURNAL.

WANTED BY FOREIGN INVESTORS.

A Good Developed Mine, either Gold or Copper, or a Large Block of Stock in such a property.

Give full particulars. Correspondence will be treated as in confidence.

P. O. Box 2592, NEW YORK.

AGENTS WANTED—SALESMAN CALLING on mines, mine supplies, quarries, railroads and similar trades; can add a manufacturers' line of large consumption. Address QUARRY, P. O. Box 307, Gloucester City, N. J.

MACHINERY FOR SALE.

KLONDIKE DREDGE
For Sale

At a sacrifice, built for collapsed Yukon enterprise, can be shipped on short notice. One large elevator mining dredge, 1,200 yards daily capacity, complete with boiler, engine, pumps, screens, sluices and gold saving attachments, cost $6,800.

Also lighter mining dredge same as above, without power, capacity 500 yards, costing $3 200. Make offers; might take part pay in stock of good company. For particulars address

C. F. DEFOREST,
ENGINEERING AND MINING JOURNAL.

FOR SALE.
CONCENTRATOR.

Adapted for copper, lead or zinc ores, capacity 30 to 50 tons per day, complete, new, first class, and in perfect running order, delivered on cars, cheap for cash, with or without the steam power plant. For specifications address P. K. MINING CO., Antelope, Idaho.

FRUE VANNERS FOR SALE.

Two New Frue Vanners, with 6-feet wide Belts, and one Browne's Hydrometric Sizer, with three compartments; made by Fraser & Chalmers; used only 30 days. Will be delivered at any railroad station in the South for $650.00. Address H. P. CLARKE, Columbia, S. C.

FOR SALE. One 14 × 14 150 horse-power, self-contained, center crank, high speed, automatic Ideal Steam Engine. Has seen some use. Is in first-class condition. Practically as good as new. Will sell for $650.00 f. o. b. Chicago, for quick cash sale. FORBE BAIN, 1657 Monadnock Block, Chicago, Ill.

ASHEVILLE AND HOT SPRINGS, N. C.

These two charming resorts, located in the mountains of Western North Carolina, are now being rapidly filled with winter tourists from the North. A more delightful place cannot be found to avoid the disagreeable March winds. They are easily reached from New York, via Pennsylvania and Southern Railway, by the Washington and Southwestern Limited, which leaves New York daily at 4.20 p. m., making the trip within twenty-two hours in through Pullman drawing-room sleeping cars. For full particulars, etc., call on or address Alex. S. Thweatt, Eastern Passenger Agent, 271 Broadway, N. Y.

UNITED STATES CONSULATE.

The Government of the United States has established a Consular Agency for the entire Kootenay District, at Rossland, B. C. All official and other business will receive prompt attention.

FRIEDRICH B. BLOCHBERGER, LL.B., Consular Agent.

FREDERICK G. CORNING, Prest. THOS. F. MASON, Vice-Prest.
THOMAS J. HURLEY, Sec'y and Treas.

THE EXPLORATION SYNDICATE,

Mills Building, 15-17 Broad and 35 Wall St., New York.
London Office: 3 Grace Church St., E. C.

SMUGGLER-UNION MINING CO.,

804 Boston Building, Denver Colo.

Mines at Telluride, San Miguel Co., Colorado.

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James B. Grant, A. Eilers, Wm. A. Bell,
Wm. D. Bishop, Jr.,
A. H. Fowler, Sec'y & Treas.

SILVER QUEEN MINING COMPANY, LTD.

(Incorporated under British Columbia laws.)

Hon. GEO. E. FOSTER, M. P., Pres't.
EDWARD C. FINCH, Gen'l Mgr.

Capital, $1,250,000. Par value shares $1 each. In the Treasury 350,000 shares. All shares fully paid up and non-assessable.

PROPERTIES: 8 claims—200 acres—Cariboo Creek, Slocan Division, West Kootenay, British Columbia.

DEVELOPMENT: 300 feet tunneling and a large amount o surface stripping and cross-cutting.

SHOWING: A 14-foot ledge with well defined walls, exposed for 3,000 feet. An equally distinct parallel ledge less developed.

LATEST ASSAYS: 96¾ ounces silver, $12 gold, 6% lead, small per cent. copper.

DIRECTORS: Hon. Geo. E. Foster, M. P., late Finance Minister of Canada; Hon. T. Mayne Daly, Q. C., late Minister of Interior of Canada; C. C. Woodhouse, Jr., M. E., Edward C. Finch, R. W. Grigor, Wm. F. Hayward, E. Maxwell, Leo. H. Schmidt.

CONSULTING ENGINEER: C. C. Woodhouse, Jr.

High-class character of this Company indisputable.

Some Treasury Shares yet available.

EDWARD C. FINCH, General Manager, Rossland, B. C.

ASSESSMENTS.

NOTICE OF ASSESSMENT.

(Civil Code of California.)

CONSOLIDATED CALIFORNIA AND VIRGINIA MINING COMPANY, location of principal place of business, San Francisco, Cal.; location of works, Virginia Mining District, Nevada.

Notice is hereby given that at a meeting of the board of directors held on the 8th day of March, 1898, an assessment, No. 11, of 25 cents per share, was levied upon the capital stock of the corporation, payable immediately in United States gold coin to the secretary, at the office of the company, Room 59, Nevada Block, 309 Montgomery street, San Francisco, Cal.

Any stock upon which this assessment shall remain unpaid on the 13th day of April, 1898, will be delinquent and advertised for sale at public auction; and unless payment is made before, will be sold on Tuesday, the 3d day of May, 1898, to pay the delinquent assessment, together with the costs of advertising and expenses of sale. By order of the board of directors.

A. W. HAVENS, Secretary.

Office, Room 59, Nevada Block, San Francisco, Cal.

DIVIDENDS.

HOMESTAKE MINING COMPANY,
MILLS BUILDING, 15 BROAD STREET,
NEW YORK, Mar. 15, 1898.

DIVIDEND NO. 239.

The regular monthly dividend, TWENTY-FIVE (25) CENTS PER SHARE, has been declared for February, payable at the office of the company, San Francisco, or at the transfer agency in New York, on the 25th inst.

Transfer books close on the 19th inst.

LOUNSBERY & CO., Transfer Agents.

CONTRACTS OPEN.

Continued from Page 20.

LIGHT PLANT.—Sealed proposals will be received by the Board of Water Commissioners of Greenwood, S. C., until twelve (12) o'clock noon, March 22, 1898, for constructing a complete system of water-works and electric light plant, and furnishing material for same.

Work will consist of a stand-pipe, 18x100; two pumps of three-quarter millions capacity each; reservoir and seven miles of street mains, 12 to 4 inches in diameter; fifty-two (52) hydrants; valves, valve boxes, pumping station, &c.; an arc light machine of fifty (50) light capacity; an incandescent light machine of one thousand (1,000) light capacity; forty (40) arc lamps in place; engine, switch-board, &c. Proposals will be received on the whole or any of the sub-divisions as shown by the specifications. Each proposal must be accompanied by a certified check, and must be on blank form, which will be furnished by the city. A bond of 20 per cent. of the contract will be required.

Plans and specifications will be on file and may be seen at the office of the Water Commissioner in Greenwood, S. C., and also at the office of Nesbit Wingfield, Consulting Engineer, Augusta, Ga.

The Board of Water Commissioners reserves the right to reject any or all bids.

COAL.—Proposals will be received by the Board of Public Charities, at their office, until 12 o'clock m. of Monday, March 21st, 1898, at which time they will be publicly opened and read by the President of said Board, or his authorized agent, for five hundred (500) tons fresh mined Westmoreland, Pa., or Youghiogheny gas coal, the best quality, each ton to consist of 2,240 lbs., and to be delivered alongside at Randall's Island, to be subject to such inspection as the Commissioners may direct, and to meet their approval as to the quality, quantity, time and manner of delivery in every respect. Blank forms of proposals and specifications, which are to be strictly complied with, can be obtained on application at the office of the Department, and all information furnished.

FRED. F. HUNT,

77 Pine St., New York,

ANALYST AND ASSAYER.

Weighing, Sampling and Assaying of Ores, Mattes, Lead Bullion and all Mineral Products.

STUDENTS

Instruction in Assaying, Chemistry and Mineralogy for Business Men.

SIMONDS & WAINWRIGHT,

CHEMICAL & MINING ENGINEERS & ANALYSTS.

Laboratories, 20 Platt St. (cor. of Gold), New York.

Assays, Analyses, Experimental Research and Consultation.

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of Metals, Cements, Stone, Etc.

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GRAIN—for Anodes, German-Silver and Steel.

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LAMBERT'S WHARFAGE CO.,

Prince of Wales Dock, SWANSEA.

Ores, Mattes, Regulus and Bars Received and Prepared for Market.

Copper, Lead, Tin, Spelter and Pig Iron Received Weighed and Sampled and Warrants issued against same.

N. B.—Warrants are on the Accepted List of the London Metal Exchange.

Regular lines of Steamers from America, Europe, etc.

Consign Goods to Lambert's Cranes, Prince of Wales Dock, Swansea.

W. F. ROBERTSON,

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